University of Alberta

Direct Object Clitics in Spanish-Speaking Children with and without Specific Language Impairment

by

Juliana De la Mora Gutiérrez ©

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A Pablo,

Por todos los sueños

en aguas de plata

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Abbreviations

1	first person	LEX	lexical response
2	second person	M	masculine
3	third person	MLU	mean length of utterance
ACC	accusative	NV-IQ	non-verbal IQ
ADI	riddles (adivinanzas)	OTH	other response
AGR	agreement	PAST	past tense
ART	article	PL	plural
CHI	child	PPT	puppet
CLP	clitic phrase	PRES	present tense
CL	clitic	PROG	progressive
CLI	clitic response	REF	reflexive
COM	comprehension	SG	singular
DEF	definite	TD	typically-developing
DEM	demonstrative	UNS	unscorable response
DIR	target production	V-IQ	verbal IQ
EXP	experimenter	WRG	wrong
F	feminine	ZRO	zero

Chapter 1

Introduction

In the two last decades, Specific Language Impairment (SLI) has been the focus of many studies on child language, which have contributed to a better understanding of language organization and acquisition in affected children. Thanks to the great amount of empirical and theoretical studies (mostly in English), we already know that children with SLI show morphosyntactic difficulties. More recently, researchers have studied languages other than English. Cross-linguistic research has shown that some morphosyntactic manifestations of SLI are language specific (Leonard, 1998; Crago & Paradis, 2003; Paradis, Crago & Genesee, 2004) and current theories of SLI seem to be insufficient for explaining these cross-linguistic differences. In contrast with empirical findings and theories based on English, Spanish-speaking children with Specific Language Impairment (SLI) have more difficulty producing direct object pronouns (clitics) than finite verb morphology (Bedore & Leonard, 2001; Bosch & Serra, 1997; Jacobson & Schwartz, 2002; Merino, 1983). Cross-linguistic data show that function words, such as clitics and articles, seem to be problematic in other Romance languages such as French (Paradis, Crago, Genesee, & Rice 2003;

Jakubowicz, Nash, Rigaut & Gerard, 1998) and Italian (Bortolini, Leonard, & Caselli 1998; Bortolini, Caselli, Deevy & Leonard, 2002; Leonard, Bortolini, Caselli, McGregor & Sabbadini, 1992). Therefore, theoretical and empirical studies in languages other than English, such as Romance languages, can contribute to a better understanding of SLI. Unfortunately, both theoretical and empirical studies on Spanish speaking children with SLI are still scarce and they usually are not conducted with a *pure monolingual* population, as most studies of Spanish children with SLI have been conducted in bilingual communities in the United States. The purpose of this thesis is to gather additional data about direct object clitics in truly monolingual populations of Spanish-speaking children with SLI, and to find out which of the current theories of SLI best explains the difficulties observed in monolingual Spanish speakers with SLI.

In the first part of this chapter, I will describe the clitic and article system in Spanish. The second section consists of a discussion of theoretical approaches to explaining SLI. In the third section, I discuss the available data on the acquisition of clitics and articles by Spanish-speaking children with and without SLI. Finally, I will state the predictions of my study based on two theoretical approaches.

1.1 The Clitic and Article System in Spanish

A clitic is generally understood as a word that cannot stand on its own and "leans" on a host word (Gerlach, 2002). In Spanish, direct object clitics are structurally dependent and they can neither occur in isolation nor in the same

positions as full pronouns or noun phrases. In Spanish, pronominal clitics agree in number and gender with the nominal referent they replace; they are monosyllabic and unstressed. The paradigm for direct object, indirect object and reflexive clitics in Spanish is shown in Table 1.1:

Table 1.1 Pronominal Clitic Paradigm in Standard Spanish

	Direct Object	Indirect Object	Reflexives (Coref. with subject)
Singular			
1st	me	me	me
2nd	te	te	te
3rd	Lo/la	le	se
Plural			
1st	nos	nos	nos
2nd	nos	nos	nos
3nd	Los/las	les	se

Because the purpose of this investigation is the study of 3rd person direct object clitics, the following discussion will be focused on these forms.

In Spanish, grammatical gender of the nominal referent is marked on 3rd person clitics. The following examples illustrate how direct object clitics in Spanish have to agree in gender and number with the object referent in the discourse. These examples also show that clitic use is discourse driven: in (1a) the object is introduced by speaker 1, thus when speaker 2 refers to the same object (1b), it is already known by the two speakers, and so she/he refers to the object by

using the appropriate clitic, i.e. *la*. The clitic chosen, in this case *la*, agrees in gender and number with the object, *pelota* 'ball'.

(1)

Situation: Ana and Juan are playing with the ball. Ana kicks the ball.

Speaker 1

a. Ana	cachó	**la**	**pelota**
Ana	catch-PAST:3SG	DEF:**SG:FEM**	ball (**SG:FEM**)
'Ana caught the ball'			

Speaker 2

b. no,	ella	**la**	pateó
no	PRO:3SG:FEM	CL:**3SG:FEM**:ACC	kick:PAST:3SG
'no, she kicked it (the ball)'			

Situation: Ana and Juan are playing with two balls. Ana kicks the balls.

Speaker 1

c. Ana	cachó	**los**	**balones**
Ana	catch-PAST:3SG	DEF:**PL:MAS**	ball:**PL(MAS)**
'Ana caught the balls'			

Speaker 2

d. no,	ella	**los**	pateó
no	3SG:FEM	CL:**PL:MAS**:ACC	kick:PAST
'no, she kicked them (the balls)'			

Within a sentence, clitics can appear either in pre-verbal (2a) or post-verbal position (2b) as proclitics or enclitics, respectively. Clitics in pre-verbal position can also appear with other clitics (2c). Clitic position is determined by the verb; they appear in pre-verbal position with a non-imperative and finite verb form (2a,c), and in post-verbal position with imperatives (2d) and non-finite verbs (2e)

like progressive participles. Clitics cannot appear post-verbally with a finite verb form (2f).

(2)

a. ella **la** pateó
3SG:FEM **CL:3SG:FEM:ACC** kick:PAST
'she kicked her/it'

b. ella quiere patear-**la**
3SG:FEM want:3SG:PRES kick-**CL:3SG:FEM:ACC**
'she wants to kick it'

c. ella **me** **la** dió
3SG:FEM **CL-REF:1SG** **CL:3SG:FEM:ACC** give-3SG:PAST
'she gave it to me'

d. ¡ábre-**la**!
2SG:FEM-open-**CL:3SG:FEM:ACC**
'open it!'

e. ellos están limpiando-**la**
3PL:MAS be-3PL:PRES clean:PROG-
CL:3SG:FEM:ACC
'they are cleaning it/her'

f. *ella pateo-**la**
3SG:FEM kick:PAST-**CL:SG:FEM:ACC**
'she kicked it'

Along with the discourse requirements and agreement and clitic placement regarding verb form, object clitics possess another syntactic characteristic. The word order (SOV) required for clitics it is different from the canonical SVO order

for lexical objects, making this structure even more complex for learners. In contrast with English, for clitic placement in Spanish the linear order (SVO) is changed when object is a pronoun (3):

(3)

S	V	O	→	S	O	V
La mamá	peinó	a Ana		La mamá	la	peinó
'The mother combed Ana'				'The mother combed her'		

In many Spanish dialects, it is possible to find *clitic doubling*, which occurs when the clitic pronoun appears together with the lexical NP referent. In the dialect of Spanish studied here, the following examples of doubling can be found but each one has a different discourse function. In cases such as (4), *speaker 1* used both the clitic form and the lexical object (4c) to emphasize; whereas in (5), clitic doubling seems to be a focusing strategy:

(4)

Speaker 1

a. la mamá peinó **a Ana**
DEF:SG:FEM mother comb:PAST:3SG **(to) Ana**
'the mother combed Ana'

Speaker 2

b. ¿qué le hizo la mamá **a Ana** ?
what CL:3SG do:PAST:3SG DEF:SG:FEM mother to Ana
'what did the mother do to Ana?'

Speaker 1

c. la mamá **la** peinó **a Ana**.
DEF:SG:FEM mother **CL:3SG:FEM:ACC** comb:PAST **(to) Ana**
'The mother combed her'(Lit. the mother combed **her Ana**)

(5)

Speaker 1

a. **ésta** **casa** me gustó más
DEM:SG:FEM **house** CL-REF:1SG like:PAST:1SG more
'I liked this house better'

Speaker 2

b. si, **ésta** **casa** **la** vamos a comprar
yes**DEM:SG:FEM** **house** **CL:3SG:FEM:ACC** go-PROG to buy
'yes, it is this house, we are going to buy' (Lit. This house we are going to buy it)

In Spanish, definite articles such as *los, las* and *la* are homophonous with direct object clitics (see Table 1.1). According to some theories of SLI that I will discuss in the following section, clitics are potentially problematic for Spanish-speaking children with SLI because of this homophony as well as similar position within a sentence. Since articles are homophonous in this language with clitics, investigating both clitics and definite articles is important for testing differences between theories of SLI (Section 1.2.2).

Articles in Spanish can be definite or indefinite. Definite articles refer to a known object, while indefinite articles refer to one object among others. Regarding stress, definite forms are unstressed monosyllabic words, while indefinite articles are one or two-syllable elements and can be either stressed or unstressed (Alarcos Llorach, 1994). Table 1.2 shows a summary of articles in Spanish.

Table 1.2 Definite and Indefinite Articles in Spanish

	Definite Articles		Indefinite Articles	
	Masculine	Feminine	Masculine	Feminine
Singular	el	*la*	un	una
Plural	*los*	*las*	unos	unas

Although gender in Spanish seems to be arbitrary, some phonological characteristics of nouns correlate with grammatical gender. In general, nouns ending in *–o* are masculine and nouns ending in *–a* are feminine. Nouns ending in consonants and in other vowels can be either masculine or feminine.

For the purposes of this investigation, I will focus on those forms, which are homophonous with object clitics in Spanish: the definite articles, i.e. *la, los,* and *las*. Besides sharing phonological structure, definite articles and clitics also share morphological and discourse characteristics. Definite articles agree in gender and number with their referent noun, as shown below in (6a). Similar to clitics, definite articles require that speaker/hearer know the object as is illustrated in (7a-c), before the speaker specifies a particular object, she/he used the indefinite form (7a). In order to specify which of a kind, speaker 1 (7c) refers to the specific object with a definite article.

(6)

a. **Las** **hormigas** rojas están hambrientas
DEF:**PL:FEM** ant:PL:FEM red:**PL:FEM** are starving:**PL:FEM**
'The red ants are starving'

(7)

Speaker 1

a. ¿Me pasas **una taza**?
'Could you pass me a cup?'

Speaker 2

b. ¿Cuál taza?
'Which cup you want?'

Speaker 1

c. **La** **taza** blanca
DEF:**SG:FEM** cup:**SG:FEM** white:**SG:FEM**
'The white cup'

1.2 Theoretical Perspectives on Specific Language Impairment

The necessity of explaining difficulties with grammatical morphology in children with SLI has motivated the development of several hypotheses whose aim is to account for these difficulties across languages. Two different types of approaches have dominated the theoretical framework: representational-based theories and processing-based theories. In general terms, *representational-based theories* (Extended Optional Infinitive/Unique Checking Constraint, Disruption-within-Delay; e.g., Wexler, 1998, 2003; Rice, 2003, 2004) claim that children with SLI have underlying specific limitations in linguistic knowledge. In contrast *processing-based theories* (Generalized Slowing Hypothesis/Surface Hypothesis; e.g., Leonard, 1998; Miller, Leonard, & Tomblin, 2001) argue that grammatical impairments observed in children with SLI are a consequence of general limitations on processing capacities.

1.2.1 Representational-based Theories

Representational-based theories suggest that it is specific deficits in linguistic knowledge that cause deficits in morphological acquisition. Thus representational-based theories claim that impaired acquisition has some deviant properties, a position best exemplified by the Disruption-Within-Delay model (DWD) (Rice, 2003, 2004). This model is basically derived from the investigation of language in large populations of monolingual English speaking children with and without SLI. Rice found that some structures in the language of children with SLI appear more affected than younger typically-developing children. Rice (2003, 2004) claims that in children with SLI, tense-marking morphemes are an especially disrupted structure; they are even more delayed than the overall delay children exhibit in other aspects of language. Rice's arguments to state such conclusions are, first, that children with SLI show more difficulties with tense marking morphemes than with other morphemes; and, second, that these difficulties are greater in children with SLI when compared with typically-developing children matched by linguistic development; and, finally, because their growth curve for tense marking morphemes differs from the growth curve of other aspects of language such as receptive vocabulary. Rice states that in children with SLI it is possible that specific structures, such as tense in English speakers children with SLI, are disrupted in development so that affected children have a selective, representational deficit in their language acquisition (Rice, 2003).

Also within the representational-based theories, there are models that explain selective deficits in SLI using formal linguistic theory. Wexler (1998, 2003) characterizes the morphological deficits in SLI as an extension of the Optional ' Infinitive Stage (OI) observed in typically developing children acquiring English, German and French (Wexler 1994). Before children acquire tense there is a period in which they do not mark tense and agreement obligatorily due to incomplete underlying linguistic knowledge. Wexler claims that by the age of three, typically-developing children use finite forms consistently but this OI stage is extended in children with SLI for a longer period than in typically developing children, and this extension of OI stage explains some of the problems observed in their use of finite morphology. Following Wexler, in typically developing children immature grammars are subject to the Unique Checking Constraint (UCC), which means that children can only check once against the D-features of their subjects: "the Unique Checking Constraint (…) prevents a D-feature on DP from checking more than one D-feature on functional categories, thus forcing either AGR or Tns to be ommited" (Wexler, 1998 p.23). In the case of English, third person 's', specifies both agreement and tense. Because of the UCC, either tense or agreement is omitted resulting in non-finite forms such as 'she like milk'. In the case of children with SLI, Wexler argues (Wexler, 2003) that UCC is also extended. Wexler claims that the same approach can explain morphological difficulties in non-Germanic languages as well (Wexler, 2003). Regarding clitics in Romance languages, children have to check forms twice according to current

formal theories. Because the UCC prohibits from double-checking, clitics will be optionally omitted in the acquisition of Romance languages by both normal and impaired children. In sum, according to representational-based theories, SLI includes selective representational deficits that affect certain structures only for disruption (disruption means worse than overall delay suggests i.e. worse than MLU matched). In the case of Romance Languages, object clitics are one of these structures but not articles.

1.2.2 Processing-based theories

On the other side are the arguments of the processing-based theories, which claim that language impairments observed in children with SLI are due to limitations in general processing capacity. With respect to these theories Leonard (1998) stated, "any proposal of limited processing capacity carries the assumption that within some domain, the specific nature of the material is less important than how this material is mentally manipulated" (p.237). According to this model, if children with SLI operate with a limited processing capacity, they probably do not form peculiar hypotheses about grammatical structure, but they will arrive at the same type of grammar seen in young normally developing children (Leonard, 1998). Within this theoretical approach there are the Generalized Slowing Hypothesis and the Surface Hypothesis. According to the Generalized Slowing Hypothesis (GSH) (Miller, et. al., 1994) language development in children with SLI is globally delayed compared to typically developing children. The reason for this delay is due to processing speed limitations, displayed in both linguistic and

non-linguistic domains, that slow down their ability to learn language and to access appropriate structures in language (Miller et al., 2001). The GSH predicts that children with SLI show a level of language development that is behind that of typically developing children of the same age, but roughly the same as younger children. The Surface Hypothesis (Leonard & Eyer, 1997; Leonard 1989, 1992, 1998) suggests that the limited processing capacity of children with SLI interacts with the surface characteristics of the language it also assumes that in the case of English, the processing capacity limitation will have an effect on the joint operations of perceiving grammatical morphemes and hypothesizing their grammatical function (Leonard, 1998). In spite of the fact that children with SLI show morphological difficulties, these difficulties are not generalized to all morphemes in a language, as the GSH would predict on its own. Leonard suggests that the selectiveness of the problem lies in the phonological salience of some morphemes, contra Rice (2003) who explains this as disruption due to representational deficits. Factors that determine saliency reside in the acoustic properties, such as stress. The Surface Hypothesis predicts that children with SLI will show more difficulties in perceiving morphemes of short duration, like unstressed monosyllables, and as a result they will show difficulties encoding them and producing them in speech. Leonard summarize the Surface Hypothesis as follows:

> "It is assumed that there is no fundamental problem with the underlying grammars of children with SLI

> independent of the problem of slow intake of relevant data due to the reduced speed of processing. The organization of these children's grammar and the order and types of hypotheses they form are no different from those seen in normally developing children "(Leonard, 1998, p.249).

As some authors have suggested (Paradis et al., 2004), a combined GSH and Surface Hypothesis account, can be used to make predictions about target structures that may be affected across languages. For Spanish, this combined account (GSH/SH), predicts that articles and clitics, homophonous unstressed forms, will be equally difficult, even if they belong to a different class because what it is important is the prosodic structure of the form, contrary to Rice (2003a). In sum, Processing-based theories claim that children with SLI are "slower" in acquiring and accessing in production target structures of their language than typically developing children of the same age, but they show a linguistic development comparable to younger children. Structures affected in children with SLI are determined by phonological salience.

1.3 The Acquisition of Clitics and Articles in Spanish-Speaking Children With and Without SLI

Numerous researchers have studied the acquisition of clitics and articles in typically developing Spanish-speaking children who are both monolingual and

bilingual (Bedore, 2001; Ezeizabarrena, 1997; Dominguez, 2003, Hernandez-Pina, 1990; Reglero & Ticio, 2003; Shum, Conde, & Diaz, 1992). The acquisition of direct object clitics is claimed to be a discourse-driven phenomenon that requires the coordination of many features (i.e. pragmatics, semantic, morphosyntactic). Most of the studies agree that Spanish-Speaking children start using object clitics around 24 to 26 months of age (Ezeizabarrena, 1997; Domínguez, 2003; Hernandez-Pina, 1990; Shum et. al., 1992). Regarding acquisition patterns, most of the studies agree that errors are frequent. Even though there is a consensus about the age of emergence there is no agreement about the errors found in typically developing children when acquiring clitics. Ezeizabarrena (1997) reported that realization of direct object clitic errors in typically-developing children was not common, although she mentions that when errors occurred in her study the vulnerable features were number (*lo* for *los*) and gender (*la* for *lo*); she did not find errors with person. Wexler, Gavarró and Torrens (2002) studied clitics in monolingual Spanish-speakers between 2 and 4 years old. They found clitic omission only in the 2 year-old children. In a more recent study, Dominguez (2003) claimed that within normal acquisition children use certain clitic forms incorrectly; she reported substitution errors only for the forms *la* and *los*. Domínguez explains that these errors are due to the clitics' complexity; she suggests, "Children may go through a stage in which they may lack some of the features of the clitics (morphological and referential)" (Domínguez, 2003 p.18). According to Domínguez, this stage can explain the

errors observed in clitics; the interpretation of referential features of object clitics is optional during the first stages of acquisition, which is analogous with the Optional Infinitive Stage in other languages (Section 1.2.1).

Regarding the acquisition of articles by monolingual Spanish-speaking children, available studies (Hernandez-Pina, 1990; Merino, 1992; Aghara, Peña, Bedore and Jackson-Maldonado, 2004) suggest that articles are acquired early in development, and singular forms are observed earlier than plural forms (De la Mora, 2000) (for a detailed description of studies in Spanish, see Merino, 1992). Within article acquisition, omission of articles is the first stage followed by a stage where the article slot is filled with a vowel preceding the noun. After this stage children begin producing definite and indefinite articles. According to Aghara, Peña, Bedore, and Jackson-Maldonado (2004), definite forms are less frequent than indefinite forms in Spanish, both in adult and child language, so it is understandable that definite forms are acquired late. Some authors have suggested that by the age of three, Spanish-speaking children have already mastered the use of articles (Aghara et al., 2004; Hernandez-Pina, 1990).

Concerning the acquisition of clitics and articles by monolingual children with SLI in Spanish, studies are still scarce. Merino (1983) studied bilingual Spanish-English children who were classified as having limited English speaking ability. She compared the production and comprehension of syntactic structures in these children with typically developing children of the same age. Merino found that the biggest difference between the two groups was in the production of direct

object clitics. Regarding errors, Merino (1983) found that children with SLI demonstrated very similar errors to those made by L1 learners of Spanish of a younger age, suggesting that when acquiring object clitics, children with SLI produce the same errors as do typically developing children. However, it is not possible to state such a conclusion definitively for two reasons. First, in order to be certain that a structure is delayed in acquisition, one must compare SLI performance with age matched and younger children who are matched for language level. Second, it would be necessary to ascertain that there is no language effect on Spanish SLI caused by English as it has been documented in other languages. For example, in French L2 learners, Paradis (2004) found evidence of transfer from English in the use of object clitics.

Bosch and Serra (1997) studied clitics in the spontaneous speech of monolingual Spanish-speaking children in Spain. They found that when comparing children with SLI with an age-matched group, the former group exhibited significantly more problems with the use of 3rd person clitics. In the same study, Bosch and Serra (1997) reported than children with SLI more commonly omitted the clitic rather than using the wrong form, i.e. substitution. Bedore and Leonard (2001) investigated the use of various forms of grammatical morphology by Spanish-speaking preschoolers with SLI in San Diego, as well as age-matched and language level-matched typically developing children. They used a structured elicitation task (children had to name pictures, complete sentences or describe on-going events) and they found that children with SLI

performed worse than the language-matched group, based on Mean Length of Utterance (MLU), and age-matched group (AGE) for clitics. Regarding errors, they found that the language group and SLI showed a very similar pattern: plural clitics were more likely to be replaced by singular clitics than vice versa, and in both groups the most common substitution errors were "one-feature errors", which means that children made errors either with gender or number but not with both (Bedore & Leonard, 2001). Even though the authors mention that participants had minimal opportunity to learn English (Bedore & Leonard, 2001), results could have been influenced by the contact of both languages in this region, which can result in structural changes in Spanish (Silva-Corvalan, 2001).

Jacobson and Schwartz (2002), also studied object clitics, but in *incipient bilinguals* which they define as "…the initial stages of contact between two languages, when an individual still has only passive knowledge of a second language" (p.23). They used picture description and repetition tasks and their results show that children with SLI used Clitic pronouns less frequently than their age-matched peers. Regarding errors, they found that omission errors outnumbered substitutions. Error analysis of children with SLI showed more difficulties in gender agreement.

Regarding the acquisition of articles by Spanish-speaking children with SLI, studies have shown contradictory results. While some researchers (Restrepo & Gutierrez-Clellen, 2001; Bosch & Serra, 1997) have reported that articles are particularly difficult for Spanish speakers with SLI, recent studies (Anderson &

Souto, 2004) reported that children with SLI did not present with deficits in noun phrase agreement. Regarding errors, Bosch and Serra as well as Bedore and Leonard (2001) found more omission errors than substitution errors. In contrast to Bedore and Leonard (2001), Bosch and Serra (1997) found that definite articles were more difficult than the indefinite articles for children with SLI. Restrepo and Gutierrez-Clellen (2001) found that children with SLI made more errors with articles than age controls and the most frequent errors were omissions and gender agreement substitutions.

The discussion above shows that although studies in Spanish SLI have been increasing in recent years, there are still many gaps in the understanding of object clitic acquisition in Spanish by children with and without language impairments. For example, prior studies in Spanish speaking children with SLI have not all included control groups matched for linguistic development, (except Bedore & Leonard, 2001), most of the studies were done on bilinguals or "incipient bilinguals" with the exception of Bosch and Serra (1997), only two studies compared clitics with articles (Bedore & Leonard, 2001; Bosch & Serra 1997) and few were designed to test theories (Bosch & Serra, 1997; Restrepo & Gutierrez-Clellen, 2001). This study's objective is to contribute to the investigation of Spanish SLI theoretically and empirically. It is an attempt to explain how clitics are acquired by typically developing children as well as by children with SLI. It is, along with Anderson and Souto's, one of the first studies on Spanish SLI looking at purely monolingual speakers of a Latin American

Spanish dialect, and it is the only study on Spanish SLI for the dialect spoken in Mexico City.

1.4 Predictions of the Study

As I mentioned in the introduction to this study, very few studies on Spanish-speaking children with SLI have taken any sort of theoretical perspectives. In this section I present what both representational-based theories and processing-based theories predict for this study, summarized below in Table 1.3. Even though the first prediction (Prediction 1) has been tested by prior research and predicted by both theories, I still wanted to investigate if in this particular sample clitics are also difficult. Prediction 2 refers to the difference expected between the SLI group and language-matched group, henceforth I will refer to the language matched group as MLU. According to representational-based theories, if it is true that clitic use by Spanish-speaking children with SLI is disrupted, the SLI group will differ from the MLU group. For the same prediction, if children with SLI are only delayed for clitic use, as processing-based theories suggest, we would not expect differences between the MLU and SLI groups. Because singular forms of clitics and articles in Spanish are less salient than plurals, because they are CV and not CVC, it will be expected, as processing-based theories suggest, that singular forms will be more problematic than plural forms (Prediction 3). If difficulties with object clitics in Spanish are due to their phonological and prosodic structure, it will be expected that the homophonous

forms (i.e. articles) will be affected to the same extent as clitics according to processing-based theories but not representational-based theories (Prediction 4). Concerning errors, both theoretical approaches predict errors; but representational-based theories predict omission errors only and processing-based theories predict both, but more substitutions (Prediction 5). The last prediction I will test in this study (Prediction 6) is if clitic use in Spanish-speaking children with SLI shows evidence for access limitations, for example if they show less accuracy on the production of clitics, as predicted by processing-based theories.

Table 1.3 Predictions for this Study by Theoretical Framework

	Predictions	Representational-based theories	Processing-based theories
1.	SLI group will perform the same as AGE for object clitic usage	NO SLI will show more difficulties than AGE	NO SLI will show more difficulties than AGE
2.	SLI group will perform the same as MLU for object clitic usage	NO SLI will show more difficulties than MLU	YES
3.	Singular clitics will be more difficult than plural clitics for SLI	N/A	YES Because singular forms are less salient
4.	Articles will be as difficult as clitics for children with SLI	NO Clitics will be more difficult than articles	YES As long as they have the same prosodic and phonological structure
5.	Children with SLI will show substitution errors	NO Omission errors only	YES More omission errors and less substitution errors
6.	Children with SLI show evidences of access limitation for clitics usage	N/A	YES Children with SLI will use clitics with less accuracy than AGE group

Chapter 2

Methods

2.1 Participants

This study included 30 monolingual speakers of Mexican Spanish between 3; 2 and 6; 2 years of age. The thirty children were divided into three groups of ten. One group included 10 children previously identified as having specific language impairment (SLI). The second and the third group of children were typically developing (TD), and were divided into age-matched and language-matched groups to the children with SLI.

Before any experimental session, the parents of all the children signed a consent form in which the testing sessions were explained. Parents of the 20 typically developing children also filled out a questionnaire with general questions about linguistic development and behavior (see Appendix B). This questionnaire was also used as a criterion for exclusion: if any of the parents reported neurological, emotional, and audiological or language problems, that child was taken out of the study. Any of the typically developing children tested for this study was removed for these reasons.

The children with SLI were recruited from the National Institute of Human

Communication in Mexico City (INCH, Instituto Nacional de la Comunicación Humana, México D.F). INCH is a public institution sponsored by the Mexican government that offers diagnosis and therapy services at low costs. In order to receive Speech and Language therapy at the center, children are required to be tested in different areas: physical, intellectual and linguistic. After being tested, they are diagnosed and, if necessary, they start a therapeutic program. Physical exams include audiometric tests, neurological tests and exploration of the oro-motor system. Along with the physical tests, children are tested for general cognitive skills through intelligence-standardized tests including WPPSI (Weschler, 1981) and WISC-RM (Weschler, 1984).

Various procedures were followed to identify the children with SLI who participated in this study. As a first step, I selected children that met standard exclusionary criteria (Leonard, 1998):

- Performance IQ of 85 or higher
- Pass hearing screening test at conventional levels
- No recent episodes of otitis media
- No evidence of seizure disorders, cerebral palsy, brain lesions. Not under medication for control of seizures.
- No oral structural anomalies
- No symptoms of impaired reciprocal social interaction or restriction of activities.

After meeting these criteria, 4 subtests of a standardized language test, BELE

(*Batería para la Evaluación de la Lengua Española para niños de 3 a 11 años*) (Gomez-Palacio, Rangel, and Romero, 1988) were administered to possible candidates. This test has 7 subtests that evaluate phonology, morphology, syntax and pragmatics. Because children with SLI present both comprehension and production problems, I choose 2 subtests that evaluate comprehension and 2 that evaluate production. For comprehension, children were tested with the subtests *Comprensión* (Comprehension) and *Adivinanzas* (Riddles). The Comprehension subtest evaluates the comprehension of syntactic structures. For this subtest the investigator showed three drawings simultaneously and said one sentence that described what was happening in one of the drawings. Children had to point out the drawing that was referred by the sentence previously heard. For the subtest *Adivinanzas* (Riddles), children had to name an object that was previously defined. Production was also evaluated with two BELE subtests (Gómez-Palacio, et al., 1988) *Producción dirigida* (Target production) and *Definiciones* (Definitions) subtests. For the first production subtest, the investigator showed two different images and said a sentence about each one and then asked the children to repeat one of them. For the second production subtest, children had to give the definition of given words. All BELE subtests were scored based on the BELE Manual, and for all subtests the standard deviation from the mean was calculated based on age expected normative scores. In order to be included in this study, children with SLI were required to obtain scores of at least <1.5 standard deviation below the age expected means on at least two of the four subtests, at

least one for comprehension and one for production. Although the phonological abilities of the 10 children with SLI that participated in this study were below age-level expectations, their use of final consonant *-s* was sufficient to rule out a purely phonological explanation of any error with clitics, particularly for plurals (*los* and *las*).

From 30 possible candidates, 10 fulfilled all the criteria for SLI for this study. Seven of the children with SLI who participated in this study were already in a Speech and Language Rehabilitation Program, while 3 of them were just about to begin. Of the 10 children with SLI, 6 were boys and 4 were girls and their ages ranged between 47 months (3; 11) and 74 months (6; 2), and their *Mean Length of Utterance* (MLU by words, calculated from 100 utterances in spontaneous speech) ranged between 1.84 and 3.66; individual information on gender, IQ scores (verbal and non-verbal), language tests scores, ages and MLUw is shown in Table 2.1.

Table 2.1 SLI Group Information

	ID code	Gen	Age in Months	MLUw	NV-IQ	V-IQ	Comprehension		Production	
							COM	ADI	DIR	DEF
1	MEDH	M	66	3.66	90	87	1	4	5	3
2	MEDF	M	63	3.54	92	86	1	5	11	6
3	MEET	M	74	2.33	90	85	11	5	3	6
4	FELB	F	73	2.52	101	76	7	0	2	7
5	FELG	F	69	2.91	112	103	11	5	5	9
6	MERC	M	60	2.81	100	80	0	5	0	5
7	MEJC	M	51	1.84	93	88	1	6	3	6
8	MEJH	M	73	3.23	95	76	4	5	3	7
9	FEPS	F	47	2.72	111	100	4	8	5	6
10	FEAC	F	59	3.21	95	86	3	6	5	7
	Mean	-	63.5	2.88	97.9	86.7	2.88	4.9	4.2	6.2
	SD	-	9.36	.56	8.06	8.96	.5	2.02	2.90	1.55

Note. Gen means gender, M=masculine and F=feminine. Age it is reported in months, MLUw corresponds to *Mean Length of Utterance* for words calculated in 100 utterances, NV-IQ means non-verbal IQ, and V-IQ means verbal IQ. For language test scores (BELE): COM= comprehension, ADI= riddles, DIR= target production and DEF= definitions.

The remaining 20 children were all typically developing (TD) and consisted of 11 boys and 9 girls. Their ages ranged between 38 months (3;2) and 66 months (5;6). The typically developing children were recruited from two different daycares, CENDI-UAM Iztapalapa (CENDI-UAM) and CENDI-Hospital Dr. Manuel Gea González (CENDI-GG). The CENDI-UAM as well as the CENDI-GG, offers free daycare services for the families of the Metropolitan Autonomous University workers and for the families of the Hospital workers respectively.

Both daycares service a broad demographic population, which is comparable with the socio-economic population served at INCH.

The 20 typically developing children selected were divided into two groups. The first group, (AGE) included 10 typically developing children that were matched for age with the SLI group. Their ages ranged between 56 months (4;8) and 66 months (5;6) and the average of the Mean Length of Utterance for words (MLUw) was 3.76, see Table 2.2 for details. The second group (MLU) included 10 typically developing children that were matched for linguistic development based on MLUw with the SLI group. The ages of children included in MLU group ranged between 38 months (3;2) and 64 months (5;4) and their MLUw ranged between 2.56 and 3.62. Table 2.3 includes detailed information on MLU group.

Table 2.2 AGE Group Information (Typically developing matched by age)

	ID Code	Gender	Age	MLUw
1	FCMR	F	63	4.02
2	FCAH	F	65	4.41
3	FCMM	F	66	3.91
4	FCMM	F	63	4.19
5	MCJS	M	56	3.49
6	FCJA	F	57	4.67
7	MCRM	M	56	3.61
8	MCOB	M	60	3.30
9	FCMC	F	64	3.08
10	MCDL	M	59	2.89
	Mean	-	60.9	3.76
	SD	-	3.78	.58

Table 2.3 MLU Group Information (Typically developing matched by MLUw)

	ID Code	Gender	Age	MLUw
1	MLKR	M	42	3.58
2	MLMG	M	40	2.56
3	FLFP	F	42	2.72
4	MLJV	M	41	3.03
5	FLNS	F	38	3.27
6	FLMC	F	40	3.62
7	MCDL	M	44	2.92
8	FLMC	F	64	3.08
9	MCDL	M	59	2.89
10	MCDM	M	48	2.92
	Mean	-	45.8	3.06
	SD	-	8.78	.34

A summary of all participants for the three groups including MLU and AGE means (with standard deviations in parentheses) is shown in Table 2.4.

Table 2.4 Summary of participants

Group	Number of children	MLU	AGE
SLI	10	2.88 (.56)	63.5 (9.36)
TD-AGE	10	3.76 (.58)	60.9 (3.78)
TD-MLU	10	3.06 (.34)	45.8 (8.78)

One-way ANOVAs followed by post hoc tests were run on the AGE, MLU and SLI groups to test whether the control groups were indeed appropriately matched for age and level of language. The ANOVA for age in months was

significant (F (2,26) = 14.196, p< .0001) and post-hoc LSD T-test showed that SLI as the same as AGE, but both were significantly different from MLU in AGE (as expected). Regarding mean length of utterances, the ANOVA was significant (F (2,19) = 3.012, p= .0731) but post-hoc LSD t-tests showed that SLI and MLU were not different in mean length of utterances, but AGE had larger MLUs than MLU and AGE, as expected.

In sum, analyses conducted confirmed that the SLI and the TD-MLU groups were matched for level of language development and the SLI and TD-AGE groups were matched for age.

2.2 Procedure

The study consisted of two tasks both were video recorded and had the children wearing wireless microphones for better sound quality. The first task was a free play session that lasted 15 minutes and the second was the Clitic Task that lasted between 20 and 30 minutes. For the two tasks, each child was seen individually for one or two sessions. In the case of the children with SLI, both the free play session and Clitic Task were conducted in a soundproof booth at the INCH. Most of the time it just took one session to finish both tasks. In the cases when children declined to participate or felt tired, the test was postponed for a later session. Typically developing children were all tested at the day care during school time. In both of the day cares, testing took place in a separate room, normally used for the psychologist of the school.

2.2.1 Free Play

All the participants were asked if they wanted to play a game. For 15 to 20 minutes, the experimenter played and talked with the children in an unstructured format. The experimenter brought a few age-appropriate toys and books for the play session in order to generate interest from the children and to start conversations. During the conversation the main topics were school, friends, games, toys, family, animals, movies or whatever the child came up with. This session was videotaped and later transcribed and coded following the CHILDES system (MacWhinney, 2000). Two Spanish native speakers, including myself, transcribed the samples. For all three groups the MLUw was calculated using the MLU CLAN command based on 100 utterances (see Section 2.4). These naturalistic samples were used for two purposes: MLU matching and article use. The free play session also functioned as a warm-up activity. It enabled the experimenter to get to know the child before the Clitic Task. If the child showed poor cooperation or shyness or simply did not want to talk, he/she was taken back to his/her classroom.

2.2.2 Clitic Task

In order to get sufficient examples and variety of clitics, I designed an elicitation task. Unlike for clitics, contexts for articles occur more frequently in naturalistic spontaneous speech in Spanish. For this reason no separate article task was required.

The purpose of the Clitic Task was to elicit the use of 3rd person direct object pronominalization in the most naturalistic way possible. The Clitic Task was an adaptation of Schaeffer's (2000) task where a puppet was used to describe a staged event and the child had to judge whether the puppet's sentence was a correct or an incorrect description of what happened in the scenario. Unlike Schaeffer's task, the task in my study focused on eliciting the use of direct object clitics rather than judgments based on comprehension. The task was organized as a chronologically structured story. Before the test was administrated to children, a pilot version was conducted informally with 10 adults. They were asked to follow the same instructions as the children. Results revealed 100% correct use of clitics in expected context and no omissions or substitutions errors.

After the free play session, the Clitic Task was conducted. The children were asked to play a game. For the Clitic Task, two experimenters were present. One of the experimenters had a puppet and the second told the story. The story was about several everyday situations. While one of the investigators told and acted out the story with small toys, the child observed and sometimes helped with the toys. Every time the scenario changed, it was taken off the table to avoid distractions.

Before the test started, the puppet, *Paco Culebra,* as well as the other characters of the story were introduced to the child. Then, one of the experimenters told the child that sometimes Paco Culebra has problems understanding and hearing. Then the experimenter asked the child for help in telling the puppet the story if he did not understand it. Here is the English

translation of the introductory script:

> *"Now we are going to play a game, I will introduce you to a friend of mine (the puppet), his name is Paco Culebra. He is very friendly but he has one problem: sometimes he cannot hear very well. So today we are going to tell you a story. We want you to help us to explain the story to Paco Culebra. If Paco repeats what I said wrong, we want you to correct him and explain to him what is happening in the story. Do you want to play?"*

After the child agreed to play, the investigator told the story. The task included a training phase in which two warm up sessions were administrated to make sure the child understood what he/she was supposed to do. The puppet described an event in the scene, sometimes erroneously. Because the child was encouraged to correct the puppet, this provided a natural context for pronominalization. The context given strongly favored a clitic object rather than a full lexical phrase. For example, in (6) the investigator told the story about the school (6a). The investigator paused and afterwards, the puppet repeated the same sentence but using a different verb (6b). Because the object was already mentioned in discourse by the investigator and also by the puppet (6a, b), there is no need to repeat the object, so in this kind of situation it is more felicitous in adult Spanish to use the clitic instead of repeating the object. In (6c) the child corrects the puppet using a *clitic*:

(6)

a.	EXP: El maestro *tocó* **la campana**	'The teacher *rang* **the bell**'
b.	PPT: El maestro *escondió* **la campana**	'The teacher *hid* **the bell**'
c.	CHI: No, **la** tocó.	'No, he rang **it**'

However, this is not the only kind of possible response. Even when the context of all the sentences in the test promoted the use of clitics, it was common to get other valid responses, such as full lexical NPs (7). In the cases where the child did not use the clitic in their responses (7c) (or used something different than a clitic such as a lexical NP), the investigator gave him/her a prompt (7d). The prompt was always a question (7d) that should have promoted the use of clitics, but neither the investigator nor the puppet used clitics that could be repeated. After the prompt was given, the question was repeated only once:

(7)

a.	EXP: El maestro tocó **la campana**	'The teacher rang **the bell**'
b.	PPT: El maestro escondió **la campana**	'The teacher hid **the bell**'
c.	CHI: No, el maestro tocó **la campana**	'No, he rang **the bell**'
d.	EXP: ¿Qué hizo el maestro con la campana?	'What did the teacher do with the bell?
e.	CHI: **La** tocó	'He rang **it**'

While the children were talking with the puppet, another experimenter noted the children's responses on score sheets (Appendix D). Responses were written for spontaneous response and prompted response separately. Moreover, all

sessions were videotaped for later transcription and verification of responses.

2.3 Materials and stimuli

For the free play session, as I mentioned in Section 2.2, the experimenter brought a few age-appropriate toys (cars, puppets, fruits etc.) and books in order to generate interest from the children and to start conversations. After 15 minutes of free play, the Clitic Task was applied.

The Clitic Task consisted of 6 different scenarios in which many actions sequentially occurred. Each scenario was built on a piece of cardboard and had different toys glued to it according to the place they represented. Because it was important that the story be meaningful for children I chose activities in which they have been a part of. The first scenario was the bedroom, which had a little bed, a drawer and some flowers. In this scenario the story was about children getting ready to go to school. There was a car used as a transitional toy to go from one scenario to other. The second scenario corresponded to a classroom. It had desks and chairs for the toys. During this scenario school activities took place, such as reading a book, playing a guitar and eating lunch. After school was finished, the toy children went to the supermarket with their mother, and they helped her buy fruit and vegetables and this was the third scenario. The next scenario was the kitchen of the house. After shopping, the children helped their mother put away the food and clean up. There was a park that was used as the fifth scenario. It had plants and small animals. The next part of the story occurred in the bathroom.

Children took a shower and they got ready to go to bed. The last event of the story occurred in the same bedroom that I used as the first scenario.

The script protocol of the Clitic Task consisted of 52 items: 42 targets, 8 fillers and 2 warm up (the full script with items is found in Appendix C). Fillers were necessary to test whether the child was still paying attention and to deter the child from developing response strategies. Neither fillers nor warm ups were scored. The 42 object clitics in the test were distributed as follows: Masculine singular (*lo*)=12; Feminine singular (*la*)=11; Masculine plural (*los*)=9; Feminine plural (*las*)=10. All sentences were distributed randomly. All the nouns and verbs included in the Clitic Task were among the vocabulary items listed on the MacArthur Communicative Development Inventory for Mexican Spanish (Jackson-Maldonado, Bates & Thal, 1992) for typically developing children aged 8 to 30 months, so it was assumed that these words were familiar to the participants who were older. The Clitic Task included 52 finite verbs, some of which were used in more than one item. All the sentences used in the task were given in the simple past form. I choose the simple past because post-verbal clitics in Spanish do not frequently appear with this form and the task was designed to get clitics in pre-verbal position.

2.4 Coding and Analysis

As mentioned in 2.2, the free play session and Clitic Task were both video recorded. Clitic Task responses were transcribed on the Answer and Score Sheet

(Appendix D) following my own coding system (see Table 2.5) and compared to the Answer Sheet written during the testing session. If there were differences, my transcription from the video was held to be correct. The Free Play transcriptions were coded for the correct and incorrect use of definite and indefinite articles (see 2.4.3.) using the conventions of the CHAT system (MacWhinney, 2000).

In general terms, analyses focused on three areas (1) clitic use in permissible context, (2) errors in clitic production and (3) comparison between clitics and articles. In the following sections, I explain my coding system. Details about individual analyses are presented along with the results in Chapter 3.

2.4.1 Clitic Usage

Because the test was designed to elicit clitics, the verb that children used was not considered for the score, just the clitic. Only the 42 target items were counted for the analysis (lo=12, la=11, los=9, las=10). For clitic use in permissible context, all children's responses to target items were coded following the system in Table 2.5.

For the analysis, clitic usage scores were calculated for each clitic type and for spontaneous response and prompted response for all children in each group. Scores were calculated based on percentage use out of permissible contexts.

Table 2.5 Coding for children's responses on the Clitic Task

CLI= CLITIC, when the clitic was correctly used (a) or when they use both clitic and lexical form (b):	
a. EXP: *¿Qué hizo Juan con el melón?*	(What did Juan do with the melon?)
CHI: ***Lo** compró*	(He bought it)
b. EXP: *¿Qué hizo Juan con el melón?*	(What did Juan do with the melon?)
CHI: *Juan **lo** compró **el melón**.*	(He bought it the melon)
LEX= LEXICAL, when the lexical form was used instead of the clitic:	
EXP: *¿Qué hizo Juan con el melón?*	(What did Juan do with the melon?)
CHI: *Juan compró **el melón**.*	(Juan bought the melon)
ZRO= ZERO, when the production includes neither the lexical form nor the clitic:	
EXP: *¿Qué hizo Juan con el melón?*	(What did Juan do with the melon?)
CHI: ***Compró**.*	(Bought)
WNG= WRONG, when they use the wrong clitic:	
EXP: *¿Qué hizo Juan con el melón?*	(What did Juan do with the melon?)
CHI: ***Los** compró.*	(He bought them)
OTH= OTHER, any other response related to the story	
EXP: *¿Qué hizo Juan con el melón?*	(What did Juan do with the melon?)
CHI: *Dijo "yo voy por el".*	(He said "I will buy it")
UNS= UNSCORABLE, for any other response unrelated to the story.	
EXP: *¿Qué hizo Juan con el melón?*	(What did Juan do with the melon?)
CHI: ***Nada.***	(Nothing)

2.4.2. Error Analysis

Besides the clitic usage analysis, I also analyzed errors in clitic production by group (SLI, MLU, AGE) and by clitic type (SG/PL, MASC/FEM). For the

analysis of both substitution and omission errors, I counted all ZRO and WNG responses. This analysis included all possible types of errors within direct object clitics (gender errors, number errors, gender and number errors) as well as the use of indirect object clitics (*le, les*) instead of direct object clitics. For this analysis I also considered the number of features that children changed in every substitution (gender, number, clitic type).

2.4.3 Article Coding and Analysis

For the analysis of articles, I coded the spontaneous speech sample of 100 utterances for article use. Utterances were coded for definite articles (*el, la, los, las*) using codes compatible with the CLAN analysis program (MacWinney, 2000). Analyses were run using the KWAL (Key Word and Line Analysis) command from CLAN. Every spontaneous utterance in children's production that contained an article was coded with two dependency tiers:

%syn= what the child produced

%cxt= what the context required

Table 2.6 shows the system of coding conventions used for these purposes:

Table 2.6 Coding for Definite Article Use in spontaneous speech

Definite Articles	
Article	Code
El	ART:SIN:MAS:DEF
La	ART:SIN:FEM:DEF
Los	ART:PLU:MAS:DEF
Las	ART:PLU:FEM:DEF

In the following example (8), the context required a singular, masculine, definite article, but the child used the feminine form (*la*) instead of the masculine form (*el*), so the coding in cases like this was as follows:

(8) *CHI: y luego **la** águila iba a comer al gato.
'and then the eagle was going to eat the cat'
%syn: $ART:SIN:**FEM**:DEF:
%cxt: $ART:SIN:**MAS**:DEF:

In (9), the child used the article that the context requires, so in this case, both tiers had same coding:

(9) *CHI: y luego **la** vaca come pasto.
'and then the cow eats grass'
%syn: $ART:SIN:**FEM**:DEF:
%cxt: $ART:SIN:**FEM**:DEF:

For the analysis of definite articles, every utterance coded with dependency tiers was counted. For every child I obtained frequencies in the use of articles overall, use of correct article according to gender and number as the context required. Percentages were calculated for omissions, substitutions and correct use of article out of the number of required contexts.

Chapter 3

Results

Prior research discussed in Chapter 1 showed that direct object clitics are problematic for Spanish-speaking children with SLI (Bosch & Serra, 1997; Bedore & Leonard, 2001; Jacobson & Schwartz, 2002). In this chapter I will examine the results of my investigation into the ability of Spanish-speaking children with SLI, compared to normally developing children, to use 3rd person direct object clitics. In addition, I will examine the errors that most frequently were observed in children with SLI compared to typically developing children. The last part of this chapter includes the analysis of definite article use in spontaneous speech as well as the comparison with clitics for both SLI and normally developing children.

3.1 Clitic Usage

According to Prediction 1 (Table 1.3), both theories claim that object clitics are going to be difficult for children with SLI and so the first analysis was to examine what kinds of objects the children used in object clitic context on the Clitic Task.

3.1.1 Object Types Used in Spontaneous Response and Prompted response

For every child of the three groups, I analyzed the 42 responses obtained in the Clitic Task for spontaneous response and prompted response (see p. 31). Each answer was coded with a three-letter string depending on the type of response (see Chapter 2, section 2.5) i.e. CLI, LEX, ZRO, WRG, OTH and UNS. After coding all responses I counted them by type, so every response type has a frequency. Once the total number of frequencies, per response and child were determined, I calculated the percentage based on the total of valid responses. Unscorable responses (UNS) were considered just for frequencies, but for percentage purposes, they were excluded from the numerator and denominator. For each group, I calculated the mean percentage and frequencies of the scored responses. Overall results for the spontaneous response are given in Table 3.1.

Table 3.1 Total Percentages and (Frequencies) of Object Types Used in Spontaneous Response

	Object Types						
Group	CLI	LEX	ZRO	WNG	OTH	UNS	Total
SLI	37 (157)	36 (150)	9 (39)	16 (68)	2 (6)	0 (0)	100 (420)
MLU	63 (255)	23 (93)	5 (22)	7 (28)	2 (9)	0 (13)	100 (407)
AGE	55 (231)	39 (163)	0.5 (2)	6 (23)	0.2 (1)	0 (0)	100 (420)

Note. CLI= correct use of clitic; LEX= full lexical noun phrase; ZRO= no clitic was used, i.e., omission; WNG=wrong response, i.e., substitution, OTH= any other response related to the story; UNS= any other response unrelated to the story.

Results in Table 3.1 show that the most common responses to the

spontaneous response, for the three groups, were clitics and full lexical NP's. When comparing the use of clitics in obligatory context across the three groups, it is clear that typically-developing children (AGE and MLU) use more clitics than children with SLI in permissible context. Clitic responses for children with SLI were as common as lexical responses. Both are grammatical, but clitic responses are more felicitous in this task when attending to discourse characteristics. This first analysis showed that, as both theories predicted, direct object clitics are problematic for children with SLI in Spanish. Regarding the ungrammatical objects or "errors" that children made, results in Table 3.1 showed that clitic omission occurred in both SLI and MLU groups. This type of error was more frequent in children with SLI than MLU-matched and almost non-existent for AGE-matched group. The fact that older children do not omit clitics (AGE) might suggest that clitic omission has a developmental component in that it might be a stage in the acquisition of object clitics at an early age. Wrong responses, such as substitutions of gender, number, or type of clitic, are present in the three groups, although there are differences between them. It was also interesting that for the three groups, WRG responses were higher in frequency than ZRO responses, which means that substitution errors were more frequent than omission errors. The percentage of wrong use of clitics was higher for the SLI group than for both controls, AGE and MLU.

In order to test if children with SLI increased their use of clitics after a prompted response was given, I calculated the response type percentages and

frequencies after the prompted response in Table 3.2. If a clitic was given as a response in the spontaneous response, no prompt was given and the Spontaneous response (CLI) was counted as CLI in Table 3.2.

Table 3.2. Total Percentages and (Frequencies) of Object Types used in Prompted response

	Object Types						
Group	CLI	LEX	ZRO	WNG	OTH	UNS	Total
SLI	45 (191)	29 (120)	8 (34)	17 (72)	0.7 (3)	0 (0)	100 (420)
MLU	77 (320)	10 (40)	5 (22)	8 (31)	0.5 (2)	0 (5)	100 (420)
AGE	85 (357)	9 (36)	0.2 (1)	6 (26)	0.0 (0)	0 (0)	100 (420)

Note. CLI= correct use of clitic; LEX= full lexical NP; ZRO= no clitic was used, i.e., omission; WNG=for responses were children use a different form than the expected i.e., substitution, OTH= any other response related to the story; UNS= any other response unrelated to the story.

After the prompt was given, there was an increase in the use of clitics to the detriment of lexical noun phrases, as was expected for all groups. It is interesting that even after the prompt, the three groups were still using some lexical responses, so none of the groups reached 100% for clitic responses. Regarding omissions (ZRO), it can be observed (in Tables 3.1 and 3.2) that the prompt has no substantial effect for this choice; even after the prompt the omissions in the three groups seem to be similar. This pattern was also observed for substitution errors (WNG), which were kept at a similar level in spontaneous response and prompted response across the three groups.

By comparing errors in spontaneous response with prompted response, I

found that substitution errors outnumbered omission errors (Tables 3.1 and 3.2) contrary to what both theories predict about errors (Table 1.3, Prediction 5). In order to investigate if the error pattern observed in children with SLI was unique for that group or if it was the same as the younger children (MLU group), I calculated the percentages of each error per group for prompted response responses out of the total number of errors. The following Table (3.3) shows the distribution of omission and substitution errors across the three groups.

Table 3.3 Percentages of Errors Across Clitic Type

	Substitution	Omission
SLI	67.92	32.08
MLU	58.49	41.51
AGE	96.30	3.70
Mean	74.24	25.76

Interestingly, the SLI and MLU group showed a similar distribution of errors, with SLI having slightly more substitutions. For the AGE group, the frequencies of errors are low (Table 3.1 and 3.2) so the pattern is not as meaningful as it is for SLI and MLU.

3.1.2 Differences in Clitic Use for Spontaneous response and Prompted response

To examine all the children's best performance with clitics and to examine SLI children's ability to supply them after a prompt, I compared children's

responses for spontaneous response with prompted response (Table 3.4). If it is true that children with SLI have access limitations as processing-based theories have suggested (See Table 1.3, Prediction 6), we might expect little or no improvement after the prompt. Results in this study showed exactly what this theory predicts: while both control groups, AGE and MLU, showed an increase in the use of clitics (30 and 14% respectively) and a significant decrease in the use of lexical responses, the SLI group did not show the same pattern, as their increase was just 8 percent (Table 3.4).

Table 3.4 Differences Between Spontaneous Response and Prompted Response on Clitic Usage

Percentages of Clitic Usage across Groups			
	Spontaneous Response	Prompted response	Difference
SLI	37%	45%	+ 8%
MLU	63%	77%	+ 14%
AGE	55%	85%	+ 30%

In sum, we can see that the only effect on responses after the prompt was in the use of clitics to the detriment of lexical forms, as was expected. After the prompt was given, ungrammatical response patterns, or errors, were almost the same. Thus, the prompt had no effect on self-correction of wrong forms, just on the choice of the most accurate response according to discourse requirements. Children with SLI showed less ability to respond to a prompt than the age-

matched and the younger language-matched children.

3.1.3 Clitic Use in Permissible Context Across Clitic Type

Results in the previous section showed the general clitic use across the four-clitic types. To address the possibility that a particular clitic in Spanish was easier than another, the following analyses were conducted to determine if there were differences in the accurate use of clitics according to type (*lo, la, los, las*). For the purpose of these analyses, I calculated the frequency and percentage for each correct response i.e. CLI per clitic type: masculine singular (*lo*), feminine singular (*la*), masculine plural (*los*) and feminine plural (*las*). In order to investigate the effect that the prompt could have in the use of individual clitic types, I compared the differences in clitic usage between spontaneous response and prompted response. Clitic use responses per group by spontaneous response/prompted response are presented in Figure 3.1 and Figure 3.2, respectively.

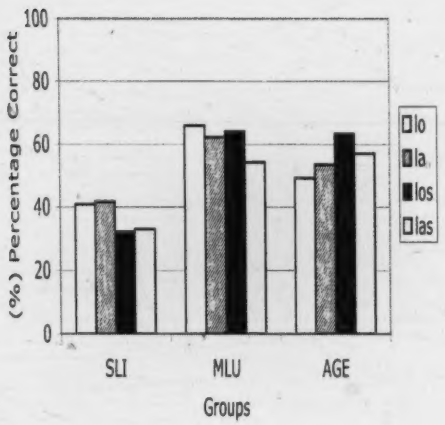

Figure 3.1 Clitic Use in Permissible Context by Group and by Type (Spontaneous Response)

Results in Figure 3.1 showed very similar scores in the use of clitics for spontaneous response for each clitic type within subject group; however differences in clitic usage between the three groups are still observable. After the prompt was given (Figure 3.2), there was also no significant difference in clitic usage according to clitic type.

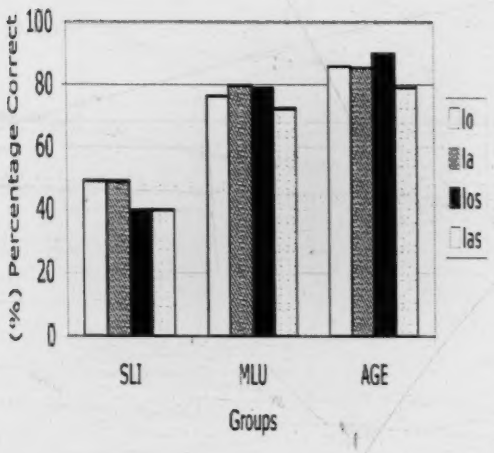

Figure 3.2 Clitic Use in Permissible Context by Group and by Type (Prompted response)

The data in Figure 3.2 were submitted to statistical analyses with the following findings. Two-way ANOVA analyses on Prompted response [Group Between = 3] X Clitic Type [Within = 4] showed a significant main effect for Group $F_{Group}(2,27)= 7.034$, $p > .004$, main effect for clitic type was non-significant $F_{Clitic\ Type} = 1.007$, $p> .05$, and non-significant Group X Clitic Interaction $F_{GroupXClitic}(6,81)= .610$, $p > .05$.

Post-hoc Fisher's PLSD tests showed that SLI supplied clitics significantly less than AGE and MLU, but AGE and MLU did not differ in clitic usage (these data

were presented at the Symposium for Research on Child Language Disorders; De la Mora, Paradis, Grinstead, Flores & Cantu, 2004). According to Prediction 2 (Table 1.3), these results seem to agree with what representational-based theories claimed for clitic usage in Spanish-SLI, that SLI<MLU. This analysis also confirmed Prediction 1 for what both theories claim: SLI<AGE for clitic usage. It is also relevant to Prediction 3 in that processing-based theories predict singular clitics to be more difficult than plural, and in this study, no difference was found.

3.2 Analysis of Errors in Clitic Use

As was shown in the previous section, substitution errors were more frequent than omission error in the three groups under study (cf. Prediction 5). The purpose of this section is to further investigate error patterns and discuss findings relevant to Predictions 2, 3 and 6 (Table 1.3).

3.2.1 Substitution errors

For the purposes of this analysis, I divided substitution errors by clitic type, first as a function of the four clitics and second as a function of gender and number. Percentages were calculated by dividing the actual form used by the expected form. Table 3.5, includes percentages and frequencies of substitution errors for the four clitic types:

Table 3.5 Percentages and (Frequencies) of Substitution Errors Across Clitic Type

	Clitic Type							
Group	*lo*		*la*		*Los*		*las*	
SLI	10.83	(13)	12.73	(14)	**22.23**	**(20)**	**25**	**(25)**
MLU	7.50	(9)	4.55	(5)	3.33	(3)	14	(14)
AGE	6.67	(8)	2.73	(3)	4.44	(4)	11	(11)

An interesting finding from these results was that for children with SLI, both plural forms, *los* and *las*, were more vulnerable to substitution by a different form. While both ND groups (MLU and AGE) do not show large differences in substitution errors for individual clitic types, it is evident that the SLI-group does: errors on plural clitics are twice as much as singular clitics, the same is true for MLU's and AGE's use of *las*. Regarding Prediction 3 in Table 1.3, this analysis shows that even though percent usage is not different for singular or plural clitics (see Section 3.1.3) plural clitics are more vulnerable to substitution errors. This contradicts Prediction 3 for Processing-based theories, as does the analysis in 3.1.3.

It has been argued that Spanish-speaking children with SLI tend to make more errors on clitics related to one feature, (Section 1.3) either gender or number but not with both (Bedore & Leonard, 2001). In order to investigate what were the most typical errors observed in substitution, with respect to features such as gender and number, I created the substitution matrix in Table 3.6.

Table 3.6 Substitution Error Matrix for SLI, MLU and AGE

SLI Group				
	Expected Form			
Actual Form	*lo*	*la*	*los*	*las*
Lo	**81.94(59)**	14.71(10)	22.41(13)	2.82(2)
La	12.50(9)	**79.41(54)**	10.34(6)	30.99(22)
Los	1.39(1)	1.47(1)	**65.52(38)**	1.41(1)
Las	0.00(0)	0.00(0)	1.72(1)	**64.79(46)**
Other (*le,les*)	4.17(3)	4.41(3)	0.00(0)	0.00(0)
Total	100.00(72)	100.00 (68)	100.00 (58)	100.00 (71)
MLU Group				
	Expected form			
Actual Form	*lo*	*la*	*los*	*las*
Lo	**90.00(90)**	5.43(5)	2.74(2)	0.00(0)
La	5.00(5)	**94.57(87)**	0.00(0)	9.30(8)
Los	0.00(0)	0.00(0)	**95.89(70)**	0.00(0)
Las	0.00(0)	0.00(0)	0.00(0)	**83.72(72)**
Other (*le,les*)	5.00(5)	0.00(0)	1.37(1)	6.98(6)
Total	100.00(100)	100.00(92)	100.00(73)	100.00(86)
AGE Group				
	Expected form			
Actual Form	*lo*	*la*	*los*	*las*
Lo	**92.79(103)**	3.09(3)	3.53(3)	0.00(0)
La	5.41(6)	**96.91(94)**	1.18(1)	11.11(10)
Los	0.90(1)	0.00(0)	**95.29(81)**	0.00(0)
Las	0.00(0)	0.00(0)	0.00(0)	**87.78(79)**
Other (*le,les*)	0.90(1)	0.00(0)	0.00(0)	1.11(1)
Total	100.00(111)	100.00(97)	100.00(85)	100(90)

For the three groups the most frequent type of substitution involved one-feature, either gender or number. For example, "la" for "las" = 30.99% but "la" for "los" was 10.34% for the SLI group. An interesting finding was that two-feature errors (gender and number) were more frequent in children with SLI (9), and almost null in the control groups, with the exception of one case on AGE group (*los* for *la*). Although frequencies were not too high for two-feature errors on children with SLI, it is probable that this kind of error is unique for SLI but more research is required.

3.2.2 Access Limitations as an Explanation for Errors

As we observed in the previous section, the children with SLI that participated in this study made more substitution errors with one feature (either gender or number) (Bedore and Leonard, 2001), than with both features i.e. *lo* for *la*; *lo* for *los*, more often than *lo* for *las*. It is possible that children with SLI show better accuracy in the use of clitics if the subject and object referents agree in gender and number. As I pointed out in Section 1.4, processing-based theories predict that the correct clitic form might be easier to access when the object and subject referent agree either on gender, number, or both (Section 1.4, Prediction 6) and as a consequence it is probable that children with SLI performed better. The purpose of the following analysis was to test if subject and object concordance on gender and number of the referents played a role in clitic usage for the SLI and MLU groups. In this particular case I decided not to include the AGE group because the number of errors was negligible.

For this analysis, I used the Clitic Task responses after the prompt. In some of stimuli sentences, the subject and object referents shared both features (gender and number), and in some sentences one of the features was different. I investigated the frequencies and percentages of substitution and omission errors with clitics as a function of matching between gender and number of subject and object referent. The 42 sentences of the Clitic Task were classified as follows (Table 3.7):

Table 3.7 Coding System Gender and Number of the Referents

1. Subject and Object have same number and gender (14 items)			
La	**mamá**	**la**	peinó(a Ana)
the	mother:**SING:FEM**	CL**:SIN:FEM:**ACC	comb:PAST
'the mother combed her (Ana)'			
2. Subject and Object differ on number (8 items)			
La	**mama**	**las**	regó (las flores)
the	mother:**SG:**FEM	CL**:PL:**FEM:ACC	water:PAST
'the mother washed them (the flowers)'			
3. Subject and Object differ on gender (12 items)			
Juan		**la**	pateó (la pelota)
SG:**MAS**		CLI:SG:**FEM**:ACC	kick:PAST
'Juan kicked it (the ball)'			
4. Subject and Object differ in both gender and number (8 items)			
Juan		**las**	regaló (las naranjas)
SG:MAS		CLI:**PL:FEM**:ACC	give:PAST
'Juan gave them away (the oranges)'			

Note. The number of items in each category (1-4) corresponds to the number of sentences of each kind that the Clitic Task has. Added up together they equal 42. As was the case for all previous analysis, neither warm-up nor fillers were included for this analysis.

I counted all substitution and omission errors that SLI and MLU showed for each of the four categories in Table 3.7. Results are reported in Table 3.8.

Table 3.8 Percentages and (Frequencies) of Errors in Clitics for SLI and MLU According to Subject-Object Agreement

Group	Same NUM and GEN	Different NUM	Different GEN	Different NUM and GEN
SLI	**15 (21)**	29 (23)	30 (36)	31 (25)
MLU	15(21)	20 (16)	19 (23)	15 (12)

Note. NUM=number and GEN=gender

Results in Table 3.8 show that in those sentences in which subject and object share the same features (gender and number), such as (1), errors were less frequent for the SLI group. For the SLI group, it was clear that when object and subject differed on gender and number, substitution errors doubled. In contrast, MLU group showed a similar error pattern for the four-type of sentences. These results suggested that access limitations might play a role in determining clitic usage for children with SLI (Table 1.3, Prediction 6).

3.3 Article Use in Spontaneous Speech

Processing-based theories predict that children with SLI will have problems with unstressed forms e.g., clitics. So far I tested that this was true for direct object clitics in monolingual Spanish-Speaking children with SLI. Following the same arguments of the processing-based theories, one will expect that the same

pattern that I observed for clitics will be repeated for any other word with the same phonological and prosodic structure, in this case definite articles. Given the prosodic structure of articles in Spanish, which are homophonous with clitics, the processing-based theories predict that definite articles will be affected to the same extent as clitics. The purpose of the following analysis was to investigate if Spanish-speaking children with SLI will show the same difficulties for articles as they showed for clitics.

As I mentioned in Section 2.4.3, articles in spontaneous speech were coded for what the children produced and for what the context required. In order to get the percentage of accuracy for article use, I divided the number of correctly used definite articles by the number of contexts in which they appeared. Table 3.9 shows the mean percentages of accuracy of definite articles per group:

Table 3.9 Mean Percentage of Correct Usage for Definite Articles per Group

	Definite Articles			
	la	*los*	*las*	Totals
SLI	91.49 (43/47)	72.73 (8/11)	87.5 (7/8)	85%(56/66)
MLU	100 (54/54)	100 (42/42)	100 (10/10)	99%(106/106)
AGE	98.61 (71/72)	93.75 (30/32)	91.67 (22/24)	96%(123/128)

These results revealed that overall accuracy for definite article use for the SLI group is above 80%. Even though the main interest of this section was definite articles, I also calculated accuracy for indefinite articles in the same context. These results were very similar to definite articles; children with SLI

used indefinite articles with over 90% accuracy. It was also interesting to observe than although children with SLI used definite articles fairly accurately, the frequencies in all cases are lower than both control groups. It is possible that children with SLI used non-specific nominal referents e.g. this thing, that one (*esta cosa, ese*) instead of more specific referents, which would require articles.

As Table 3.9 shows, definite articles seem to be not a problem neither for children with SLI (84% of accuracy), nor for any of the control groups (99% for MLU and 95% for AGE group). These results become more meaningful when compared with clitics. For global accuracy with clitics (see Table 3.2) children with SLI just reached 45% compared with 84% accuracy for definite articles.

Table 3.10 Percentages of Accuracy for Object Clitics and Definite Articles

Group	Object Clitics[a]	Definite Articles[b]
SLI	45%	86%
MLU	75%	99%
AGE	85%	96%

[a] Global results taken from Table 3.2

[b] Global results taken from Table 3.9

From Table 3.10 it is possible to conclude that in any of the three groups included in this study, children did not use object clitics with the same accuracy as definite articles, which contradicts the prediction of processing-based theories (Table 1.3, Prediction 4).

3.4 Summary of Results and Prediction

Finally, Table 3.11 summarizes the most salient results of this study compared with what each theory will predict.

Table 3.11 Summary of Results

Predictions	Results	Rep-based Theories	Proc-based Theories
1. SLI group will perform the same as AGE for object clitic usage	**NO**	**NO ✓**	**NO ✓**
2. SLI group will perform the same as MLU for object clitic usage	**NO SLI showed more difficulties than SLI**	**NO ✓ SLI will show more difficulties than MLU**	YES ✘
3. Singular clitics will be more difficult than plural clitics for SLI	**NO Plural forms were more vulnerable than singular**	N/A	YES ✘ Because singular forms are less salient
4. Articles will be as difficult as clitics for children with SLI	**NO Clitics were more difficult than articles**	**NO ✓ Clitics will be more difficult than articles**	YES ✘
5. Children with SLI will show substitution errors	**YES More substitution errors and less omission errors**	NO ✘ Omission only	**YES ✓ More omission errors and less substitution errors**
6. Children with SLI show evidences of access limitation for clitics usage	**YES**	N/A	**YES ✓ Children with SLI will use clitics with less accuracy than AGE group**

Note. Symbol "✓" means prediction supported by results and symbol "✘" means prediction was not supported

Chapter 4

General Discussion and Conclusions

In this Chapter, I will discuss the implications of the results presented in the previous chapter. The purpose of this study was to gather empirical data on direct object clitics in Spanish-speaking children with and without specific language impairment. I studied 30 children whose ages ranged between 3;2 and 6;2 years old. From these children, 10 were previously diagnosed as having SLI and 20 were used as age and language-matched control groups. All children participated in a Clitic Task as well as in a spontaneous conversation. The Clitic Task was used to evaluate usage of direct object clitics. As part of the theoretical predictions that I tested, I included an analysis of definite articles, which are homophonous to clitics and for this purpose I used data obtained from spontaneous conversation. In the following sections I will discuss the results of this study as well as the general contribution of this investigation.

4.1 Comparison between Results of this Study and Prior Research

4.1.1 Clitic Usage

Similar to other researchers, I found that the children with SLI performed worse than MLU-matched and age-matched children in their use of clitics (Bedore & Leonard, 2001; Bosch & Serra 1997; Jacobson & Schwartz, 2002). Although not all previous studies used both kinds of control groups (MLU and AGE) for children with SLI, in every study affected children used fewer clitics than typically developing children (Bosch & Serra, 1997; Jacobson & Schwartz, 2002). With respect to clitic use, Bedore and Leonard (2001) found that children with specific language impairment had significantly lower scores for clitic use than control groups matched by age and by linguistic development, similar to the results reported in this study. Results in this study are also comparable to those obtained with truly monolingual Italian children (Bortolini, Caselli & Leonard, 1997; Leonard et. al. 1992). In Italian, as well as in this particular study of Spanish, children with SLI performed below the level of an MLU control group on direct object clitics production. Regarding clitic type in this study, like Jacobson and Schwartz (2002), clitic type (*lo, la, los, las*) made no difference in usage.

None of the previous studies of Spanish SLI has examined children's performance after a prompt was given, and thus, this study is unique in looking at this, with the results showing substantial improvement for both control groups and

a scarce improvement for children with SLI. Another interesting finding in this study was that children with SLI did not show difficulties with clitic placement; they always used object clitics in *proclitic* position.

4.1.2 Analysis of Errors

Concerning errors observed in children with specific language impairment, results in this study differed from what other studies have reported before. Previous studies on Spanish SLI, found more omission errors than substitution errors for language impaired children (Bedore & Leonard, 2001; Jacobson & Schwartz 2002; Bosch & Serra). In this study, percentages of substitution errors (68%) outnumbered omission errors (32%). It is possible that in the case of Bedore and Leonard (2001) and Jacobson and Schwartz (2002), these differences might be due to language transfer, because the population under study lived in bilingual communities where English and Spanish contact is unavoidable. However, in the case of Bosch and Serra (1997) all participants lived in a monolingual community and the same result was found. Regarding omission of clitics, I found that both children with specific language impairment and younger children with the same level of linguistic development, omitted clitics. In contrast, Bosch and Serra (1997) found that clitic omission was a unique pattern of children with specific language impairment.

Recall that Bedore and Leonard (2001) found that substitution errors in children with SLI tended to be "one feature-errors". Results presented in this study are congruent with this finding. In addition, I found that children with SLI

made considerably more two-feature errors than AGE group. This pattern observed in children with SLI should be studied in depth because it can provide information about the nature of the impairment.

4.1.3 Definite Article Use. Comparison with Clitics

In contrast to clitics, children with SLI included in this study did not show difficulties with definite or indefinite article usage, and this result is consistent with Anderson and Souto (2004), Bosch and Serra (1997) and Bedore and Leonard (2001). I found than the children with SLI in my study used definite and indefinite articles with slightly less accuracy than both control groups (SLI ≤MLU=AGE), which is comparable with previous studies such as Bedore and Leonard (2001) and Bosch and Serra (1997), who found that children with SLI used articles with less accuracy than age-matched control group but with same accuracy as the language-matched group. Low frequency in the use of articles might suggest that children with SLI used more non-specific than specific nominal referents, but this hypothesis has to be tested by further investigation of the transcripts. In this study the most difficult article form for children with SLI was *los* (72%, from Table 3.9), different from Restrepo and Gutierrez-Clellen (2001) who found that the highest percentages of errors occurred with the singular masculine form, i.e. *el*.

4.2 Results of this Study and Theories of SLI

According to the representational-based theories SLI is a selective representational deficit, which is going to be evidenced through the disruption of certain language structures in acquisition. This approach suggests that because of the morphosyntactic properties of clitics, it is expected that children with SLI will omit them. In support of representational-based theories, and in contrast to processing-based theories, this study showed that the children with SLI performed worse than their MLU-matched peers for clitic usage. Results from this study seem to support the view that clitics in children with SLI are not only delayed but also disrupted. Regarding clitics and articles, these theories predict that clitics are going to be more difficult than articles because their syntax involves double-checking of features. Results reported here support that claim: clitics were more difficult than articles for children with and without SLI. Regarding error results found in this study they contradict representational-based theories' predictions, because these theories claimed that errors with clitics are going to overwhelmingly involve omission, and contrary to this claim, I found that substitution was the most common error form.

On the other side of the theoretical approaches, processing-based theories suggest that difficulties in SLI are directly related to the phonological and prosodic structure of the input language, and how this interacts with processing limitations, so children with SLI show delayed language development, similar to younger children matched for language level, but these results contradict this

claim because SLI performed worse than MLU. Also according to these models, clitics and articles are going to be difficult to the same extent for children with SLI in Spanish. But, results here showed that articles are not as difficult as clitics for Spanish-speaking children with SLI. Also, contrary to what processing-based theories predicted about errors, results in this study showed more substitutions than omissions and furthermore plural clitics were more vulnerable to substitution errors than singular forms. Turning to access limitations, these theories claim that children with SLI have limitations on processing capacities, and this argument can be supported by the prompted responses for SLI: the scarce improvement after the prompted response might suggest access limitations in these children. Another result that supports access limitations was that children with SLI made fewer errors with clitics when the subject and object referent shared both gender and number; and thus, access limitations may play a role in determining clitic usage for children with SLI in Spanish. An alternative explanation for why SLI children have problems with clitics and no problems with articles could be that children with SLI learned articles attached to nouns as a chunk but this hypothesis needs to be followed up by feature research.

Even though none of the theories discussed here made claims about discourse and pragmatics skills on children with SLI, results in this study seem to suggest that discourse and pragmatic requirements for clitic usage in Spanish might be disrupted in children with SLI, but definitely more studies are required to test it.

In sum, it is possible to conclude that the results reported here argue for and against both theories. Results in this study suggest that neither of the current theories of SLI, i.e. representational and processing-based, can fully explain the phenomena under study. However, on balance it seems that representational-based theories are more consistent with results from this study. It is possible that there is both a disruption and an access limitation component to the acquisition of object clitics in Spanish-speaking children with SLI. Results from this study also suggest that two-feature errors observed in children with SLI should be considered as a potential clinical marker of impairment in Spanish.

4.3 Contributions and Conclusions

This study shows that experimental tasks such as the one used in this study, allowed the testing of a particular linguistic structure in a more naturalistic way than has been done before. Because the clitic task does not have the same structure as a formal test, it was more like natural discourse and this is more readily comparable to naturalistic speech. Regarding clinical implications, these results, along with previous investigations suggest that direct object clitics in Spanish speakers should be part of a diagnostic test for SLI in this language.

This particular study is the first contribution to the field of Spanish SLI using speakers of the Mexico City. It also shows that more studies on specific language impairment in truly monolingual Spanish-speakers are still required for a better understanding of impairment in this language. The results of this study also

challenge the theories discussed here because they do not fully explain SLI in Spanish. In light of these results, there needs to be either a modification of the discussed theories so that they pertain to Spanish SLI, or there needs to be a new approach that considers cross-linguistic differences.

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Appendixes

Appendix A

Information and Consent Form for Research Participation (Spanish)

Estimados Padres de familia:

El Departamento de Lingüística de la Universidad de Alberta, Canada está realizando un estudio de tipo lingüístico en niños hablantes de español como lengua materna. El propósito de dicho estudio es el de descubrir si ciertas estructuras gramaticales encontradas en niños cuyo desarrollo de lenguaje se ha dado dentro de los parámetros de la normalidad, son de particular utilidad para identificar a niños con un trastorno conocido como Problema Específico de Lenguaje (SLI por sus siglas en inglés).

Nos dirigimos a ustedes para solicitar su autorización para que su hijo(a), participe en este proyecto. La participación de los niños requiere de dos actividades, una de conversación y otra de juego con títeres. Los resultados obtenidos serán de caracter confidencial y utilizados únicamente con fines de investigación. Para que su hijo(a) pueda participar en este proyecto es necesario llenar el cuestionario anexo así como la hoja de autorización.

Agradecemos de antemano su atención.

HOJA DE AUTORIZACION

Yo _____ doy mi autorización para que mi hijo(a)

Nombre del padre o tutor

_____ participe en los juegos descritos

Nombre del niño (a)

anteriormente. Entiendo que los resultados serán de caracter confidencial y utilizados con fines educativos y de investigación.

_____ _____

Firma del padre o tutor Fecha

Appendix A

Information and Consent Form for Research Participation (English Translation)

Dear Parents:

We are looking for families to volunteer their children for participation in a study of learning Spanish as a first language. The purpose of this study is to investigate if certain grammatical structures in typically developing children, can be useful for the identification of children with Specific Language Impairment (SLI).

This study involves one visit to your child's school. During the visit, the researcher plays a game. The game involves toys and a puppet. During the game your child will be asked to correct the puppet when he says things wrong.

Participation in this study in entirely voluntary. Any information that is collected from your child will be kept strictly confidential.

AUTORIZATION FORM

Yes I am interested in participating !

Your name:_____

Phone number:_____

Child's name:_____

Date:_____

Appendix B

Questionnaire (Spanish)

CUESTIONARIO

Nombre de su hijo(a)_____

Edad:_____ Fecha de nacimiento: _____

Marque con una cruz las opciones que corresponden con su hijo(a):

1. Su hijo oye bien

( ) Si ( ) No

2. Su hijo tiene algun problema para comprender:

( ) lo que se le dice

( ) lo que pasa en un programa de television

( ) intrucciones

( ) lo que pasa en un cuento

( ) lo que escucha en la radio

3. Su hijo tiende a subir el volumen de la television

( ) Si ( ) No

4. Se le han hecho estudios de:

( ) Oído Resultados: _____

( ) Neurológicos Resultados:_____

( ) Lenguaje Resultados: _____

5. Ha recibido alguna vez educación especial

( ) Si ( ) No

Appendix B

Questionnaire (English Translation)

QUESTIONNAIRE

Child's name_____

Age:_____ Date of birth: _____

Fill in the options that better describe your child:

6. Your child hears well

( ) Yes ( ) No

7. Your child has any problem understanding

( ) what someone says

( ) what happens on TV

( ) instructions

( ) what happens on a story

( ) what she/he hears on the radio

8. Your child usually turns the volume up (TV or radio)

( ) Yes ( ) No

9. Has your child been tested with any of the following tests:

( ) Hearing Tests Results: _____

( ) Neurological Tests Results:_____

( ) Languaje Tests Results: _____

10. Has your child received Special Education?

( ) Yes ( ) No

Appendix C

Script Protocol. (Spanish)

PROTOCOLO DE ENTREVISTA		
Códigos: XX = Prueba # * = fillers INV= Investigador (*Investigator*). PPT= Paco culebra (*Puppet*). CHI= Niño (*Child*) NOTE: If the child does not use the clitic, the question in ***bold*** is repeated to get a second response (prompted response).		
Escenario 1		El desayuno (*Breakfast time*)
XX	INV: PPT: CHI: INV: CHI:	La mamá despertó a Juan. La mamá empujó a Juan. No! ***Entonces, ¿qué le hizo la mamá a Juan?*** La mamá **lo** despertó
XX	INV: PPT: CHI: INV: CHI:	La mamá regó las plantas . La mamá tiró las plantas. No . ***Entonces, ¿ qué le hizo la mamá a las plantas?*** La mamá **las** regó
1	INV: PPT: CHI: INV: CHI:	La mamá despertó a Ana . La mamá durmió a Ana . No . ***¿Qué le hizo la mamá a Ana?*** La mamá **la** despertó
2	INV: PPT: CHI: INV: CHI:	Juan se lavó los dientes Juan se ensució los dientes . No . ***Entonces, ¿ qué hizo Juan con sus dientes?*** Juan se **los** lavó
3	INV: PPT: CHI: INV: CHI:	La mamá calentó las quesadillas . La mamá se comió las quesadillas? No ***Entonces ¿qué hizo la mamá con las quesadillas?*** La mamá **las** calentó
4	INV: PPT:	La mamá peinó a Juan . La mamá despeinó a Juan .

	CHI:	No.
	INV:	***¿Qué le hizo la mamá a Juan?***
	CHI:	La mamá **lo** peinó
***5**	INV:	Ana se lavó los dientes .
	PPT:	Ana se lavó los dientes?
	CHI:	Sí .
6	INV:	La mamá prendió el coche .
	PPT:	La mamá chocó el coche .
	CHI:	No!
	INV:	***¿Qué le hizo la mamá al coche?***
	CHI:	La mamá **lo** prendió
7	INV:	La mamá llevó a los niños a la escuela .
	PPT:	La mamá recogió a los niños en la escuela .
	CHI:	No.
	INV:	***¿Qué le hizo la mamá a los niños?***
	CHI:	La mamá **los** llevó
Escenario 2		En la escuela (*School time*)
8	INV:	Los niños sacaron la tarea .
	PPT:	Los niños tiraron la tarea .
	CHI:	No.
	INV:	***¿Qué hicieron los niños con la tarea?***
	CHI:	Ellos **la** sacaron .
9	INV:	El maestro saludó a los niños.
	PPT:	El maestro regañó a los niños.
	CHI:	No.
	INV:	***¿Qué le hizo el maestro a los niños?***
	CHI:	El maestro **los** saludó
***10**	INV:	El maestro tocó la guitarra.
	PPT:	El maestro tocó la guitarra.
	CHI:	Sí .
11	INV:	El maestro leyó un cuento.
	PPT:	El maestro regaló un cuento .
	CHI:	No.
	INV:	***¿Qué hizo el maestro con el cuento?***
	CHI:	El maestro **lo** leyó
12	INV:	El maestro tocó la campana.
	PPT:	El maestro escondió la campana .
	CHI:	No .
	INV:	***¿Qué hizo el maestro con la campana?***
	CHI:	El maestro **la** tocó
13	INV:	Juan se comió su plátano.
	PPT:	Juan regaló su plátano.
	CHI:	No.

	INV:	***¿Qué hizo Juan con su plátano?***
	CHI:	Juan se **lo** comió
14	INV:	Juan regaló sus naranjas.
	PPT:	Juan aventó sus naranjas.
	CHI:	No.
	INV:	***¿Qué hizo Juan con sus naranjas?***
	CHI:	Juan **las** regaló
Escenario 3		Vamos al mercado (*Going shopping*)
***15**	INV:	Mamá lo llevó al mercado.
	PPT:	Mamá lo llevó al mercado.
	CHI:	Sí.
16	INV:	La mamá compró manzanas.
	PPT:	La mamá comió manzanas.
	CHI:	No.
	INV:	***¿Qué hizo la mamá de Juan con las manzanas?***
	CHI:	La mamá **las** compró
17	INV:	La mamá pidió la sandía.
	PPT:	La mamá abrió la sandía .
	CHI:	No.
	INV:	***Entonces, ¿qué hizo la mamá con la sandía?***
	CHI:	La mamá **la** pidió
18	INV:	Juan cargó las bolsas.
	PPT:	Juan tiró las bolsas.
	CHI:	No
	INV:	***¿Qué hizo Juan con las bolsas?***
	CHI:	Juan **las** cargo
19	INV:	Juan tiró la sandía.
	PPT:	Juan se comió la sandía .
	CHI:	No.
	INV:	***¿Qué hizo Juan con la sandía?***
	CHI:	Juan **la** tiró
***20**	INV:	La mamá probó las naranjas.
	PPT:	La mamá probó las naranjas.
	CHI:	Sí.
21	INV:	Juan compró los chiles.
	PPT:	Juan tiró los chiles.
	CHI:	No.
	INV:	***¿Qué hizo Juan con los chiles?***
	CHI:	Juan **los** compró.
22	INV:	Juan y su mamá se comieron las manzanas.
	PPT:	Juan y su mamá tiraron las manzanas.
	CHI:	No.
	INV:	***¿Qué hicieron Juan y su mamá con las manzanas?***

	CHI:	Juan y su mama se **las** comieron.
23	INV:	La mamá pagó el melón.
	PPT:	La mamá tiró el melón.
	CHI:	No.
	INV:	***¿Qué hizo la mamá con el melón?***
	CHI:	La mamá **lo** pagó
Escenario 4		Ayudando en casa (*Helping at home*)
24	INV:	Ana sacó la fruta .
	PPT:	Ana compró la fruta.
	CHI:	No.
	INV:	***¿Qué hizo Ana con la fruta?***
	CHI:	Ana **la** sacó
***25**	INV:	Juan lavó la sandía.
	PPT:	Juan lavó la sandía.
	CHI:	Sí.
26	INV:	Juan guardó los plátanos.
	PPT:	Juan peló los plátanos.
	CHI:	No.
	INV:	***¿Qué hizo Juan con los plátanos?***
	CHI:	Juan **los** guardó
27	INV:	La mamá limpió la estufa.
	PPT:	La mama ensució la estufa.
	CHI:	No.
	INV:	***¿Qué hizo la mamá con la estufa?***
	CHI:	La mamá **la** limpió
28	INV:	Ana abrió la llave del agua.
	PPT:	Ana cerró la llave del agua.
	CHI:	No.
	INV:	***¿Qué hizo Ana con la llave de agua?***
	CHI:	Ana **la** abrió
29	INV:	La mamá lavó los trastes.
	PPT:	La mamá rompió los trastes.
	CHI:	No.
	INV:	***¿Qué hizo la mamá con los trastes?***
	CHI:	La mamá **los** lavó
***30**	INV:	La mamá cortó el melón.
	PPT:	La mamá cortó el melón.
	CHI:	Si, La mamá **lo** picó
31	INV:	La mamá barrió el piso.
	PPT:	La mamá mojó el piso.
	CHI:	No
	INV:	***¿Qué hizo la mama con el piso?***
	CHI:	La mamá **lo** barrio

32	INV:	Ana y Juan secaron los trastes.
	PPT:	Ana y Juan los rompieron.
	CHI:	No.
	INV:	***¿Qué hicieron Ana y Juan con los trastes?***
	CHI:	Ana y Juan **los** secaron
Escenario 5		En el parque (*At the park*)
33	INV:	El perro persiguió a Juan.
	PPT:	El perro mordió a Juan.
	CHI:	No.
	INV:	***¿Qué le hizo el perro a Juan?***
	CHI:	El perro **lo** persiguió
34	INV:	Ana y Juan se comieron las papas.
	PPT:	Ana y Juan regalaron las papas.
	CHI:	No.
	INV:	***¿Qué hicieron Ana y Juan con las papas?***
	CHI:	Se **las** comieron.
***35**	INV:	Juan pateó la pelota.
	PPT:	Juan pateó la pelota.
	CHI:	Sí Juan **la** pateó
36	INV:	Ana cachó la pelota.
	PPT:	Ana aventó la pelota.
	CHI:	No.
	INV:	***¿Qué hizo Ana con la pelota.***
	CHI:	Ana **la** cachó.
37	INV:	Juan soltó al perro.
	PPT:	Juan amarró al perro.
	INV:	***¿Qué hizo Juan con el perro?***
	CHI:	Juan **lo** soltó
38	INV:	El perro lamió a Juan.
	PPT:	El perro mordió a Juan.
	INV:	***¿Qué le hizo el perro a Juan?***
	CHI:	El perro **lo** lamió
39	INV:	Ana y Juan cortaron flores.
	PPT:	Ana y Juan regaron las flores.
	CHI:	No.
	INV:	***¿Qué hicieron Ana y Juan con las flores?***
	CHI:	Ana y Juan **las** cortaron
***40**	INV:	El papá perdió las llaves.
	PPT:	El papá perdió las llaves.
	CHI:	Sí, el papá **las** perdió
41	INV:	Juan subió al perro al coche.
	PPT:	Juan bajó al perro del coche.
	CHI:	No.

	INV:	***¿Qué hizo Juan con el perro?***
	CHI:	Juan **lo** subió.
Escenario 6		Hora de dormir (*Bedtime*)
42	INV:	El papá cepilló a Ana.
	PPT:	El papá bañó a Ana.
	CHI:	No.
	INV:	***¿Qué le hizo el papá a Ana.***
	CHI:	El papa **la** cepilló
43	INV:	El papá bañó a Juan.
	PPT:	El papá durmió a Juan.
	INV:	***¿Qué le hizo el papá a Juan?***
	CHI:	El papa **lo** bañó
44	INV:	Ana y Juan se comieron las donas.
	PPT:	Ana y Juan tiraron las donas.
	CHI:	No.
	INV:	***¿Qué hicieron Ana y Juan con las donas?***
	CHI:	Ana y Juan se **las** comieron.
***45**	INV:	Papá peinó a Juan.
	PPT:	Papá peinó a Juan.
	CHI:	Sí, el papá **lo** peinó
46	INV:	Juan apagó las luces.
	PPT:	Juan prendió las luces.
	CHI:	No.
	INV:	***¿Qué hizo Juan con las luces?***
	CHI:	Juan **las** apagó.
47	INV:	Juan y Ana se tomaron la leche.
	PPT:	Juan y Ana tiraron la leche.
	CHI:	No.
	INV:	***¿Qué hicieron Ana y Juan con la leche?***
	CHI:	Juan y Ana se **la** tomaron.
48	INV:	Juan se lavó los dientes.
	PPT:	Juan se ensució los dientes.
	CHI:	No.
	INV:	***¿Qué hizo Juan con sus dientes?***
	CHI:	Juan se **los** lavó
49	INV:	Papá leyó un cuento.
	PPT:	Papá tiró un cuento.
	CHI:	No.
	INV:	***¿Qué hizo papá con el cuento?***
	CHI:	Papá **lo** leyó
50	INV:	Papá metió a Ana y a Juan a la cama.
	PPT:	Papa sacó a Ana y a Juan de la cama.
	CHI:	No .

	INV:	¿Qué les hizo papá a Ana y a Juan?
	CHI:	Papá **los** metió a la cama.

Appendix C

Script Protocol (English translation)

SCRIPT PROTOCOL		
Codes: XX =Warm up * = Filler INV= Investigator. PPT= Puppet (Paco culebra) CHI= Child NOTE: If the child does not use the clitic, the question (in **bold letters**) is asked to get a second response (prompted response).		
Scenario 1		*Breakfast time*
XX	INV: PPT: CHI: INV: CHI:	The mother woke Juan up. The mother pushed Juan. No! ***So, what did the mother do to Juan?*** The mother woke him up.
XX	INV: PPT: CHI: INV: CHI:	The mother watered the plants . The mother cut the plants. No . ***So, what did the mother do to the plants?*** The mother watered them.
1	INV: PPT: CHI: INV: CHI:	The mother woke Ana up . The mother slept Ana . No . ***So, what did the mother do to Ana?*** The mother woke her up
2	INV: PPT: CHI: INV: CHI:	Juan brushed his teeth. Juan dirtied his teeth . No . ***So, what did Juan do with his teeth?*** Juan washed them.
3	INV: PPT: CHI: INV: CHI:	The mother warmed up the *quesadillas* . The mother ate the *quesadillas* No. ***So, what did the mother do with the quesadillas?*** The mother warmed them up.
4	INV: PPT: CHI:	The mother combed Juan's hair . The mother ruffle Juan's hair off. No.

	INV:	***So, what did the mother do to Juan?***
	CHI:	The mother combed him
***5**	INV:	Ana brushed her teeth .
	PPT:	Ana brushed her teeth.
	CHI:	Yes.
6	INV:	The mother started the car .
	PPT:	The mother crashed the car .
	CHI:	No!
	INV:	***So, what did the mother do with the car?***
	CHI:	The mother started it.
7	INV:	The mother took kids to school .
	PPT:	The mother picked the kids up form school .
	CHI:	No!
	INV:	***So, what did the mother do with the kids?***
	CHI:	The mother took them to the school.
Scenario 2		*School time*
8	INV:	The children took their homework out of their bags.
	PPT:	The children threw their homework away.
	CHI:	No!
	INV:	***So, what did the children do?***
	CHI:	The children took them out of their bags.
9	INV:	The teacher said hello to the children.
	PPT:	The teacher scolded the children.
	CHI:	No!
	INV:	***So, what did the do to the children.?***
	CHI:	The teacher said hello to them.
***10**	INV:	The teacher played the guitar.
	PPT:	The teacher played the guitar.
	CHI:	Yes!
11	INV:	The teacher read a book.
	PPT:	The teacher gave a book to the children .
	CHI:	No!
	INV:	***So, what did the teacher do with the book.?***
	CHI:	The teacher read it.
12	INV:	The teacher rang the bell.
	PPT:	The teacher hid the bell .
	CHI:	No !
	INV:	***So, what did teacher do with the bell?***
	CHI:	The teacher rang it.
13	INV:	Juan ate his banana.
	PPT:	Juan threw his banana away.
	CHI:	No !
	INV:	***So, what did Juan do with the banana?***

	CHI:	Juan ate it.
14	INV:	Juan gave his oranges away.
	PPT:	Juan threw his oranges away.
	CHI:	No!
	INV:	***So, what did Juan do with his oranges?***
	CHI:	Juan gave them away.
Scenario 3		*Going shoping*
***15**	INV:	Mamá took Juan to the market.
	PPT:	Mamá took him to the market.
	CHI:	Yes.
16	INV:	The mother bought apples
	PPT:	The mother ate apples.
	CHI:	No.
	INV:	***So, what did the mother do with the apples?***
	CHI:	The mother bought them.
17	INV:	The mother dropped the watermelon.
	PPT:	The mother cut the watermelon.
	CHI:	No.
	INV:	***So what did the mother do with the watermelon?***
	CHI:	The mother dropped it.
18	INV:	Juan carried the shopping bags.
	PPT:	Juan threw the shopping bags.
	CHI:	No!
	INV:	***So, what did Juan do with the shopping bags?***
	CHI:	Juan carried them.
19	INV:	Juan threw the watermelon.
	PPT:	Juan ate the watermelon.
	CHI:	No.
	INV:	***So, what did Juan do with watermelon?***
	CHI:	Juan threw it.
***20**	INV:	The mother tasted the oranges.
	PPT:	The mother tasted the oranges.
	CHI:	Yes.
21	INV:	Juan bought the chiles.
	PPT:	Juan threw the chiles away.
	CHI:	No.
	INV:	***So, what did Juan do with the chiles?***
	CHI:	Juan bought them.
22	INV:	Juan and his mother ate the apples.
	PPT:	Juan and his mother threw the apples.
	CHI:	No.
	INV:	***So, what did they do with the apples?***
	CHI:	Juan and his mother ate them.

23	INV:	The mother paid for the melon.
	PPT:	The mother threw the melon.
	CHI:	No.
	INV:	***So, what did the mother do with the melon?***
	CHI:	The mother paid for it.
Scenario 4		Ayudando en casa (*Helping at home*)
24	INV:	Ana brought the fruit out.
	PPT:	Ana bought the fruit.
	CHI:	No.
	INV:	***So, what did Ana do with the fruit?***
	CHI:	Ana brought it out.
***25**	INV:	Juan washed the watermelon.
	PPT:	Juan washed the watermelon.
	CHI:	Yes.
26	INV:	Juan put the bananas away.
	PPT:	Juan peeled the bananas.
	CHI:	No!
	INV:	***So, what did Juan do with the bananas?***
	CHI:	Juan put them away.
27	INV:	The mother cleaned the stove.
	PPT:	The mother dirtied the stove.
	CHI:	No!
	INV:	***So, what did the mother do with the stove?***
	CHI:	The mother cleaned it
28	INV:	Ana opened the faucet.
	PPT:	Ana closed the faucet.
	CHI:	No.
	INV:	***So, what did Ana do with the faucet?***
	CHI:	Ana opened it.
29	INV:	The mother washed the dishes.
	PPT:	The mother broke the dishes.
	CHI:	No!
	INV:	***So, what did the mother do with the dishes?***
	CHI:	The mother washed them.
***30**	INV:	The mother cut the melon.
	PPT:	The mother cut the melon.
	CHI:	Yes.
31	INV:	The mother swept the floor.
	PPT:	The mother wet the floor.
	CHI:	No!
	INV:	***So, what did the mother do to the floor?***
	CHI:	The mother swept it.
32	INV:	Ana and Juan dried the dishes.

	PPT:	Ana and Juan broke the dishes
	CHI:	No!
	INV:	***So, what did Ana and Juan do to the dishes?***
	CHI:	Ana and Juan dried them.
Scenario 5		En el parque (*At the park*)
33	INV:	The dog followed Juan.
	PPT:	The dog bit Juan
	CHI:	No.
	INV:	***So, what did the dog do?***
	CHI:	The dog followed him.
34	INV:	Ana and Juan ate the chips.
	PPT:	Ana y Juan threw the chips away.
	CHI:	No!
	INV:	***So, what did Ana and Juan do with the chips?***
	CHI:	Ana and Juan ate them.
***35**	INV:	Juan kicked the ball.
	PPT:	Juan kicked the ball.
	CHI:	Yes!
36	INV:	Ana caught the ball.
	PPT:	Ana threw the ball.
	CHI:	No!
	INV:	***So, what Ana do with the ball?***
	CHI:	Ana caught it.
37	INV:	Juan untied the dog.
	PPT:	Juan tied the dog.
	CHI:	No!
	INV:	***So, what did Juan do with the dog?***
	CHI:	Juan untied it.
38	INV:	The dog licked Juan.
	PPT:	The dog bit Juan.
	CHI:	No!
	INV:	***So, what the dog do to Juan?***
	CHI:	The dog licked him.
39	INV:	Ana and Juan cut some flowers.
	PPT:	Ana and Juan watered the flowers.
	CHI:	No.
	INV:	***So, what did Ana and Juan do to the flowers?***
	CHI:	Ana and Juan cut them.
***40**	INV:	The dad lost the keys.
	PPT:	The dad lost the keys.
	CHI:	Yes.
41	INV:	Juan put the dog in the car.
	PPT:	Juan let the dog out of the car.

	CHI:	No.
	INV:	***So, what did Juan do with the dog?***
	CHI:	Juan put him in the car.
Scenario 6		Hora de dormir (*Bedtime*)
42	INV:	The dad combed Ana's hair.
	PPT:	The dad washed Ana's hair.
	CHI:	No.
	INV:	***So, what did the dad do to Ana's hair?***
	CHI:	The dad combed it.
43	INV:	The dad gave Juan a bath.
	PPT:	The dad put Juan to sleep.
	CHI:	No!
	INV:	***So what did the father do with Juan?***
	CHI:	The dad gave him a bath.
44	INV:	Ana and Juan ate the donuts
	PPT:	Ana and Juan threw the donuts.
	CHI:	No.
	INV:	***So, what did Juan and Ana do with the donuts?***
	CHI:	Ana and Juan ate them.
***45**	INV:	The dad combed Juan.
	PPT:	The dad combed Juan.
	CHI:	Yes.
46	INV:	Juan turned the lights off.
	PPT:	Juan turned the lights on.
	CHI:	No!
	INV:	***So, what did Juan do with the lights?***
	CHI:	Juan turned them off.
47	INV:	Juan and Ana drank the milk
	PPT:	Juan and Ana spilled the milk.
	CHI:	No!
	INV:	***So, what did Juan and Ana do with the milk?***
	CHI:	Juan and Ana drank it.
48	INV:	Juan brushed his teeth.
	PPT:	Juan dirtied his teeth
	CHI:	No!
	INV:	***So, what did Juan do with his teeth?***
	CHI:	Juan brushed them.
49	INV:	The dad read a book.
	PPT:	The dad hid a book.
	CHI:	No!
	INV:	***So, what did the dad do with the book?***
	CHI:	The dad read it.

50	INV:	The dad put Ana and Juan in bed (to sleep).
	PPT:	The dad took Ana and Juan from the bed.
	CHI:	No!
	INV:	**So, what did the dad do to Ana and Juan?**
	CHI:	The dad put them in bed.

Appendix D

Answer and Score Sheet

ANSWER AND SCORE SHEET

ID CODE: _____
TAPE: _____
NAME: _____
AGE:_____ DATE OF BIRTH: _____
FILE NUMBER: _____
DATE OF THE INTERVIEW: _____
PLACE OF THE INTERVIEW: _____
INTERVIEW (ERS): _____
RESPONSES:
CLI= correct clitic; **LEX**= lexical response; **WNG**= wrong clitic (specify);
OTH= other; **UNS**=unscorable.

	Answer	Clitic	1st response	2nd response
XX	La mamá **lo** despertó	lo		
XX	La mamá **las** regó	las		
1	La mamá **la** despertó	la		
2	Juan se **los** lavó	los		
3	La mamá **las** calentó	las		
4	La mamá **lo** peinó	lo		
*5	Ana se **los** lavó	los		
6	La mamá **lo** prendió	lo		
7	La mamá **los** llevó	los		
8	Maestro **la** tocó	la		
9	Maestro **los** saludó	los		
*10	Maestro **la** tocó	la		
11	El maestro **lo** leyó	lo		
12	El maestro **la** tocó	la		
13	Juan se **lo** comió	lo		
14	Juan **las** regaló	las		
*15	La mamá **lo** llevó	lo		
16	La mamá **las** compró	las		
17	La mamá **la** pidió	la		
18	Juan **las** cargo	las		
19	Juan **la** tiró	la		
*20	La mamá **las** probó	las		

21	Juan **los** compró	los		
22	Juan y su mamá se **las** comieron.	las		
23	La mamá **lo** pagó	lo		
24	Ana **la** sacó	la		
*25	Juan **la** lavó	la		
26	Ana **los** guardó	los		
27	La mamá **la** limpió	la		
28	Ana **la** abrió	la		
29	La mamá **los** lavó	los		
*30	La mamá **lo** picó	lo		
31	La mamá **lo** barrió	lo		
32	Ana y Juan **los** secaron	los		
33	El perro **lo** persiguió	lo		
34	Ana y Juan **las** abrieron	las		
*35	Juan **la** pateó	la		
36	Ana **la** cachó	la		
37	Juan **lo** soltó	lo		
38	El perro **lo** lamió	lo		
39	Ana y Juan **las** cortaron	las		
*40	El papá **las** perdió	las		
41	Juan **lo** subió	Lo		
42	El papá **la** cepilló	la		
43	El papá **lo** bañó	lo		
44	Ana y Juan se **las** comieron	las		
*45	Papá **lo** peinó	lo		
46	Juan **las** apagó	las		
47	Juan y Ana se **la** tomaron	la		
48	Juan se **los** lavó	los		
49	Papá **lo** leyó	lo		
*50	Papá **los** metió a la cama	los		

RESULTS	CLITIC		LEX		WRONG		OTHER		UNS	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
LA										
LAS										
LO										
LOS										
TOTAL										